ERIC Document Resume	See Instruction Sheet	DATE OF RESUME	DATE RECEIVED

A. PUBLICATION DATA

ED001143	2. ORIGINATOR CONTROL NO(S). N.A.	3. IDENTIFICATION NO. N.A.

DO NOT WRITE IN SPACE BELOW

4. AUTHOR(S):
N.A.

5. TITLE OF DOCUMENT ABSTRACTED:
The Challenge: A Program for Gifted Children in the Seventh Grade

6. PUBLICATION TITLE:
N.A.

7. EDITOR(S):
Carter, C. Douglas

9. PUBLISHER OR SOURCE
Department of Education, Western Carolina College, Cullowhee, North Carolina

10. VOL.	11. PAGES	12. MO./YR.	13. TOTAL PP.
N.A.	N.A.	N.A.	99

8. PLACE OF ORIGIN
ORG. Department of Edu.
ST. Western Carolina College
Cullowhee, N.C.
CITY, STATE
TELE. EXT.
INST/LOC CODE

MICROFILM COPY AVAILABLE
YES ☒ NO ☐

COPYRIGHT GRANTED
YES ☐ NO ☒

COPYRIGHT RELEASE FILED
YES ☐ NO ☐

TYPE OF REPORT
PROPOSAL ☐
IN-PROGRESS ☒
FINAL ☐
FOLLOW-UP ☐

OTHER ERIC REFERENCES:

ERIC SATELLITE CODE

B. INDEXING DATA

14. SUBJECT AREA

15. TYPE OF ENDEAVOR
curriculum guide

16. INDEXING TERMS (6-12)

curriculum enrichment	discussion techniques	gifted children	
vocabulary enlargement	junior high school	exceptionally talented	
student initiative	language arts		

17. ABSTRACT (MAX. 250 WORDS)

Ideas included are the product of an intensive workshop held to study the public school education of exceptionally talented children.

Problem areas in each subject are presented and major emphasis is given to reading, communication and vocabulary. Teaching suggestions and objectives are presented in outline form. To complete the full enrichment course in reading, spelling, listening, and literature are discussed. The social studies unit includes a guide for using community resources and suggests aids for conducting any classroom discussion. The arithmetic unit emphasizes insight into the number system structure in hopes of aiding all mathematical situations. Enrichment in science, art, music, dancing and dramatics is also included. Classroom materials needed and anticipated outcomes are given for each area.

ERIC No. 18. SOURCE OF ABSTRACT

C. FUNDING DATA

19. SUPPORTING ORGANIZATION

20. DIVISION OR DEPT.

21. CONTRACT NO.

PROJECT NO.

22. TOTAL COST OF PROJECT

23. DURATION OR PROJECT

U.S. Department of Health,
Education, and Welfare
Office of Education

2

ED001143

The Challenge . . .

A PROGRAM
for
GIFTED CHILDREN
in the
SEVENTH GRADE

REPRINTED BY PERMISSION
U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN PRINTED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

The Challenge

The general objects - - - are to provide an education adapted to the years, to the capacity, and the condition of everyone, and directed to their freedom and happiness - - - We hope to avail the state of those talents which nature has sown as liberally among the poor as the rich, but which perish without use, if not sought for and cultivated.

- Thomas Jefferson,
Notes on Virginia

THE CHALLENGE . . .

A PROGRAM FOR GIFTED CHILDREN

C. DOUGLAS CARTER
EDITOR

FIELD DIRECTOR OF THE COMMISSION TO STUDY THE PUBLIC
SCHOOL EDUCATION OF EXCEPTIONALLY
TALENTED CHILDREN OF THE STATE OF NORTH CAROLINA
AND
DIRECTOR OF SPECIAL SERVICES
WINSTON-SALEM CITY SCHOOLS
WINSTON-SALEM, NORTH CAROLINA

FOREWORD

This guide is the consummation of an intensive workshop held at Western Carolina College sponsored by the North Carolina Commission to Study the Public School Education of Exceptionally Talented Children.

Gratitude is expressed to the following dedicated teachers, principals, and supervisors for their painstaking and intelligent devotion in the preparation of these guides.

Aycock, Lucille F.
Babb, Clara C.
Broome, Ethel Park
Broome, H. S.
Clark, Eva M.
Cross, E. Martin
Ellett, Elizabeth W.
Freeman, Mae Morton
Freeman, Ottis C.
Gray, Mary Lee
Hawkins, James
Helms, Kate L.
Henries, Gladys
Isaacs, Edith B.
Leslie, Mary Ann
Martin, Louvenia P.
Morrison, Janie
Mullen, Ted
Myers, Roy Lee
Peele, Anna B.
Plyler, Annette P.
Presson, Helen James
Scott, John J.
Skokan, Olga E.
Strickland, Thomas L.
Weant, Agnes Pugh
Wells, Mamie Perry
Williams, Maude T.

GRATITUDE IS EXPRESSED TO

C. D. KILLIAN

CHAIRMAN OF THE COMMISSION TO STUDY THE PUBLIC
SCHOOL EDUCATION OF EXCEPTIONALLY
TALENTED CHILDREN OF THE STATE OF NORTH CAROLINA
AND
HEAD OF DEPARTMENT OF EDUCATION AND PSYCHOLOGY
WESTERN CAROLINA COLLEGE
CULLOWHEE, NORTH CAROLINA

H. H. BIXLER

RESEARCH DIRECTOR OF THE COMMISSION TO STUDY THE PUBLIC
SCHOOL EDUCATION OF EXCEPTIONALLY
TALENTED CHILDREN OF THE STATE OF NORTH CAROLINA
AND
PROFESSOR OF EDUCATION
WESTERN CAROLINA COLLEGE
CULLOWHEE, NORTH CAROLINA

FOR THEIR HELPFUL ADVICE AND COUNSEL IN THE
PREPARATION OF THIS MANUAL

TO THE TEACHER

This guide represents the cooperative efforts of the teachers of North Carolina who were chosen by the Commission to Study the Public School Education of the Exceptionally Talented and by the State of North Carolina and to develop an enrichment program that will not only meet the needs of the exceptionally talented, but will be helpful in providing an enrichment program for all children, since "the keynote to all good teaching is enrichment."

From such a program, we believe will come facility in the skills of abstract thinking, organization, discriminating judgment, creative writing and the ability to engage profitably, and purposefully, in group activity; hence, enrichment will result.

The planners further think that enrichment will accrue, only to the extent that children learn the essential skills and that subject matter becomes meaningful and purposeful to the learner.

It is also our belief, that if these activities are carefully and intelligently followed, that beyond the development of skills, there will be a depth of understanding which will result in critical and conceptual thinking on the part of the learner.

This outline represents a nucleus of purposeful planning, whereby, the resourceful teacher may broaden the scope and implement a program that is more extensive than that of the course of study as outlined by the Department of Public Instruction in the State of North Carolina and will add depth and breadth to the teaching program.

THIS WE BELIEVE

The language arts program is the key that "unlocks the door" to all other areas of learning. The language arts program prepares students for a creative and responsible life in a democracy. This is of paramount importance for it is through the language arts program that students learn the important art of communication, which includes good thinking, correct oral and written expression, appreciative listening, reading with comprehension and appreciation, and a skillful use of libraries and other materials.

It is extremely important that we, as teachers, make provisions for a program that will promote and develop in children the ability and desire to express themselves in a natural manner and that they be permitted to develop their potentialities and appreciations in a fuller language arts program.

THIS WE NEED

The Reader's Guide to Periodical Literature

World Almanac, Information Please Almanac

Atlases such as Rand McNally World Atlas, Hammond's New World Atlas, or Encyclopedia Britannica Atlas

Biographies such as Who's Who in America, Dictionary of Ameridan Biography, Twentieth Century Authors

Literature and book reviews--Atlantic Monthly, Harper's Magazine, Saturday Review

Encyclopedias--Compton's Pictured Encyclopedia, Britannica Junior, World Book Encyclopedia

Current news magazines such as Time, NNewsweek, Pathfinder, U. S. News and World Reoort

Science magazines such as Popular Science Monthly, Scientific American Popular Mechanics

Travel magazines such as National Geographic, Holiday, Travel Gazeteer

Newspapers

Book sections of Sunday newspapers

Magazines such as Reader's Digest and Coronet

Roget's Thesaurus

Dictionaries--abridged and unabridged--Webster's New International Dictionary

Spelling references such as Word Wealth, Jr. by Ward Miller and Word Fun for Friday, Scott Foresman and Company

Comparative literature such as the series Comparative Literature published by Noble and Noble or the series Four Novels published by Harcourt Brace and Company

LANGUAGE ARTS-SEVENTH GRADE

Problem Area I

Reading

A. Basic reading skills

B. General semantics

C. Critical reading

Problem Area II

Language

A. Creative writing

B. Other types of writing

C. Oral activities

D. Dramatics

Problem Area III

Literature

A. Appreciation

B. Analysis of types of literature

Problem Area IV

Listening

A. Listening Skills

B. Listening Activities

Problem Area V

Spelling

General Enrichment

BASIC READING SKILLS

This We Can Do....

A. We can encourage the students to:

1. Learn to take good notes and to outline

2. Learn to enlarge their vocabularies in a systematic fashion.

3. Learn to use effectively indexes, tables of contents, prefaces, dictionaries, encyclopedias, reference books, atlases, and to develop other good library habits.

4. Increase his reading speed. Check his comprehension to determine the rate of reading required for various types of material.

5. Read purposefully
    a. To acquire new information
    b. To find the solution to a problem
    c. To draw conclusions
    d. To discover new problems
    e. To evaluate materials
    f. To find concepts
    g. To form opinions

GENERAL SEMANTICS

> "Talking to themselves unceasingly, men spin without
> end a net of words by which
> their thoughts, indeed their
> destinies, are stayed."
> Wendell Johnson

This We Believe...

We use the term "general semantics" as the relationship between language and thought.

Since words have such a profound effect upon our lives and we live in a world of close communication, we feel that the study of general semantics has a definite place in the enrichment program for gifted children.

The study of general semantics should make the student aware of the importance of words in our daily lives, interest him in the origin of words, show the relationship between language and thought, show the misuse of the language and increase his ability to appreciate challenging literature and the fine arts.

This We Need...

C. C. Merriam and Co. Picturesque Word Origins

Christ, Henry I., Winning Words

Funk, Wilfred and Lewis, Norman, Thirty Days to a More Powerful Vocabulary

Johnson, Wendell, Your Most Enchanted Listener

Minteer, Catherine, Words and What They Do to You

Nurmberg, and Rhodes, W. F., How to Build a Better Vocabulary

Roget's Thesaurus

This We Can Do...

1. Relationship between meaning and context

Ask the class to write what comes to their minds when they hear a word such as "fly". You can expect such responses as the following:

Time flies.
He caught the fly and the game was over.
I am going to fly to California.
I'd like to fly away from here.
Ducks are flying South.
My family overslept and I had to fly to get to school on time.

From this activity the teacher could encourage the students to make drawings or write short episodes in which one word is used for various meanings.

2. "Time" context.

Use an example such as "John struck his mother." Get the students to see that time is important by indicating whether John is two years old or sixteen years old. Students could collect statements to illustrate this concept from sources such as reference books, maps, and periodicals. Emphasis should be placed on the fact that the reading of anything should take into account the date it was written.

3. Application of the idea of general semantics

Ask students to read such selections as "The Blind Men and the Elephant" and discuss how the thought of the selection applies to the study of general semantics.

4. Word activities

a. Have students keep a notebook of interesting words or phrases they find in listening or reading. The words could be listed in categories such as "Soft Words", "Loud Words", "Exciting Words", "Colored Words", or "Foreign Words". Encourage students to originate other categories. This type of activity would be applicable in developing special vocabularies such as those used in politics (caucus, steering committee, floor leader, filibustering, rider, quorum, referendum).

b. Give students sentences such as the following: If you needed a gastropod, would you look for one at a gas station, a drugstore, or on the beach? Ask them to write sentences using sililar words. Use these as a basis for class discussion.

c. Ask students to find the history of words--names, places, flowers, persons. Start with a word such as "bonfire." Explain that, at one time, it meant a "fire of bones" and referred to the actual burning of bones. Such words as calaboose, cabbage, sandwich, cantaloupe, titanic, jeans, tantalize, guillotine, sourdough, boudoir, and mackinaw could be used.

d. Individual dictionaries can be made using synonyms, antonyms, or rhyming words. The student could be encouraged to use original ideas for illustration of differences between words.

e. Help students develop a specialized vocabulary such as the vocabulary they would use in science, mathematics, social studies, medicine, or aviation.

5. Students could collect cartoons or jokes that owe their humor to semantic confusion. They could also collect folklore such as rope-jumping rhymes, legends or folk songs.

6. Ask students to listen to a speech and take care to notice whenever they disagree with a speaker. They could ask themselves the following questions:

> Did I give a particular word or phrase a different meaning from that intended by the speaker?
> Did I read more into the statement than the speaker intended?

These questions could become a basis for oral discussion or written activity.

7. Ask students to review a television program and check the facts presented in literature with those on the program.

8. Ask students to read several books about one man or historical event and note the discrepancies in facts.

This We Can Expect...

Experienced educators in an experiment at Nettlehorst School in Chicago gave these as some of the reasons for their enthusiasm about teaching general semantics.

1. Interest was stimulated in such areas as science, social studies, mathematics, and the fine arts.

2. General semantics reached each pupil at his own level of experience.

3. Pupils and teachers shared common experiences.

4. The emotional climate of the classroom was improved.

5. Written expression was motivated.
6. Pupil behavior improved.
7. Maturity was emphasized.

CRITICAL READING

This We Can Do...

We can encourage students to participate in some of the following activities:

1. Learn to use radio and television guides for the selection of worthwhile programs.
2. Learn to read newspapers and magazines critically.
3. Establish the habit of reading book reviews.
4. Read selections of prose and poetry for analysis, interpretation, and criticism.
5. Select peems and stories which illustrate specific styles of writing.
6. Establish and use standards to determine which stories, poems, and activities are really superior.
7. Encourage critical reading by comparing different authors on the same subject.
8. Develop criteria to judge whether an author is qualified to write on a particular subject.
9. Have enough variety in newspapers and magazines to help students select and critically evaluate this type of reading.
10. Have students read widely to select material suitable for plays, tableaus, momologues or puppet shows.
11. Read widely and make a compilation of anthologies to be used by teachers who request poetry on various subjects.
12. Analyze and evaluate library and other materials on a specific topic.
13. Locate and use numerous authoritative sources to verify facts and give weight to opinions.
14. Read biographies and other materials to deepen and broaden hobbies.
15. Read materials to help better understand human relationships.
16. Select poems and stories which illustrate specific styles of writing.
17. Scan reference books and other printed materials for sources of information.
18. Read selections of prose and poetry for analysis, interpretation and criticism.
19. Determine the author's values in a selection and compare them with the reader's.
20. Evaluate reading materials, books for the library, reference materials for unit study, free and inexpensive materials obtained for class work.

21. Skim to select descriptive phrases, topic sentences, plot sequence and summarizing statements.

CREATIVE WRITING

There can be no clear distinction between stimulating and improving writing, since anything that stimulates writing will probably improve it, and anything that improves it will stimulate more of it.

This We Can Do...

1. Encourage the student to schedule a given amount of time each day for writing, whether it is in a diary, in letter writing, in poetry or other forms.

2. Suggest that the student keep a journal corresponding to an artist's sketch book. In it he can record descriptions of people, events, and places.

3. Encourage him to read good books on a variety of subjects. Talk about the child's interests with him and the librarian.

4. If a poet, novelist, or journalist lives in your community, arrange a meeting between him and the youngster if possible. Help the child prepare questions such as the following: "Where do you get your ideas for writing?"

5. Show photographs and sketches as writing stimulants. Get a group discussion started on what is going on in the picture. Then let the class write the story.

6. Create characters and plots with your pupils as a classroom project. Make up a continued story from week to week.

7. Play musical records, several times if necessary, and ask the students to write a story about the music. Use records that are not familiar to the youngsters.

8. Pick out a situation such as a basketball game, a skating party, Christmas morning, or a cottage at the lake. Ask the students to think of all the words they can that are associated with the places or events.

9. Write a simple, colorless sentence on the board such as the following: "The boy ran." or "The trees swayed." Ask the students to make the sentence picturesque.

10. Give lead-off sentences from which the students can develop stories.
    "The hinge creaked behind me."
    "The old man and the girl walked slowly up the street."

11. Ask them to take a character from a book and transplant him to modern life.

12. Have the students imagine themselves in Old England or on the moon and then ask them to write a story about their experiences.
13. Read an interesting story to the class. Stop short of the climax, and let the students write the ending.

14. Explain the meaning of the term "anecdote." Illustrate its meaning by telling one or two anecdotes and have students tell anecdotes. Then they would write the most successful ones.

15. Using words such as "fast" or "crawling" or "run" see how many uses or shades of meaning are attached to them.
Example:

The boy is running down the street.
The fence runs around the field.
Time is running out.

16. Put four to six pictures on the bulletin board. Include pictures of animals and people. Ask the pupils to write catchy titles to these pictures, using one, two and three-word titles.

17. Ask the students to bring pictures and write catchy captions for them. Next, ask them to read their titles to the class and have the rest of the class describe what the picture is about in three sentences or less. Then have the students hold up the pictures and see which of the descriptions written by the class fits best.

18. Ask the students to invent fairy tales or fanciful myths about why it rains or where thunder comes from.

19. Lead the student to use his own imagination with fictional material. He may, for example, write new incidents using the same characters, suppose that certain events happened differently from the way the author described them and write the ending as it might be then; or write letters that might have been written by characters at given points of the story.

20. Lead the student to understand that the interpretation of his own experiences is the best basis for gaining skill in accurate reporting. The students could be asked to make a list: "Things I Like", "Things I Dislike", "Things I Would Change". Later they could be asked to write a theme on topics such as "This I Remember" or "This I Believe."

21. The student may write a narrative showing the incidents that might have happened between two chapters of a novel or after the ending of a story.

22. Questions to serve as a basis for creative writing:
    a. How would you improve traffic conditions in your city?
    b. If you were the President of the United States what things would you do to improve relations with Cuba, Russia, or some other country?
    c. Write six slogans an advertiser might use for selling a certain product.
    d. How would you start a clean-up campaign in your city?
    e. How could educators make the school day more interesting?
    f. Give five ways to introduce a new student to your class.
    g. What do you find irritating?

23. Students could take the roles of editor and author. The author would submit the manuscript to the other student (editor). The editor would return the manuscript giving reasons for acceptance or rejection of the manuscript.

OTHER TYPES OF WRITING

This We Can Do...

1. Compile a file of unit materials.
2. Prepare bibliographies to accompany a unit of work.
3. Make graphs.
4. Organize and adapt difficult materials used by the high, average, or slow group.
5. Learn the techniques of speedy and accurate note taking.
6. Learn the form of outlining.
7. Learn to use footnotes, abbreviations, and library classifications.
8. Learn to recognize and use the forms of journalism such as editorials, feature articles, and advertisements.
9. Make objective checks, charts and outlines as guides for gathering information.
10. Publish a newspaper or magazine.
11. Write directions for playing a game, assembling things, or carrying out a scientific experiment.
12. Write descriptions of the work of the class for a class record or scrap book.
13. Write book reviews for the local paper.
14. Write biographies or autobiographies.
15. Compile the history of handwriting.
16. Define the mechanics of writing (sentence structure, punctuation, word choice, word form) in order to achieve clarity of expression and audience appeal.
17. Record scenes and characters needed to dramatize a story or event and write the sequence of action for a play or puppet show.
18. Write and illustrate stories. Bind them into booklets.
19. Assemble and edit material for newspapers, scrapbooks or social studies units.
20. Keep records for class activities, committee membership, list of jobs to be done, or materials to be used.

ORAL ACTIVITIES

This We Can Do...

We can encourage students to participate in some of the following activities:

1. Tell stories to the class or to other students.

2. Participate in storytelling clubs, drama clubs, or speech clubs.

3. Use originality and creativeness in making oral reports.

4. Develop the ability to participate in and lead discussions (evaluating television programs, book criticisms, group behavior, field trips, or current events).

5. Give directions for playing games, for organizing activities, or for carrying out science experiments.

6. Introduce the guest speaker at a class program or school assembly.

7. Participate in debate or panel discussions.

8. Act as leader of group projects and participate in planning and evaluating class and assembly programs.

9. Conduct meetings using simple parliamentary procedure.

10. Make inquiries and arrangements by telephone for material and information needed in the classroom.

11. Barticipate in all phases of theater production (directing, staging, lighting, and acting).

12. Speak before public groups.

13. Express feelings about music, painting, and other art creations.

14. Make tape recordings of his own voice for self-evaluation and improvement.

15. Interpret stories from literature and student's own creative stories.

16. Give talks about hobbies, collections, or other special interests.

17. Direct choral speaking and assume solo roles.

18. Interview classroom visitors, community residents, and resource people for oral reports.

19. Plan a play for a particular group and present it to that group.

20. Explain with clarity a technical subject, such as a factory operation or some astronomical phenomenon.

21. Analyze voices of others to determine the tone, speed, and volume of a pleasant voice and work to develop these qualities in his own voice.

22. Read aloud various types of poetry, observing rules of poetic expression.

23. Discuss a children's theater production and tell how the plot developed and analyze character development.

24. Make slides for a social living activity and explain the slides to the group.

25. Take charge of small groups for conversational experience and grammatical practice.

26. Give oral book reviews.

DRAMATIC ACTIVITIES

This We Can Do...

We can encourage students to participate in some of the following activities:

1. Write, produce, and direct an original play, radio program, or television program. These could grow out of research, experiences, literature, and everyday situations.
2. Develop original dance routines.
3. Give dramatic readings for assemblies or parent groups.
4. Arrange and participate in pantomime programs.
5. Study and analyze the roles of characters in plays and stories.
6. Select a role to play. Consider how to interpret emotions and feelings.
7. Play roles of different personalities and discuss why and how the characters respomd and act as they do.
8. Improvise and discuss problem situations.
9. Dramatize old tales dealing with fundamental ideas, values, and morals.
10. Plan all phases of theater production-(directing, stage lighting, stage designing and costuming). This could develop into a play acting group. The play acting activities as such would be best as an extra curricular activity.
11. Encourage the gifted child to find books to stimulate his interest in dramatics. Good plays, biographies of great actors and actresses, and books on stage craft and acting can provide much encouragement as well as many fascinating hours of enjoyment.

LITERATURE

An enriched program for the gifted child implies a greater scope of activities, freedom to follow special interests, more opportunity to apply initiative and originality and more opportunity for expression of talent.

A. Appreciation

1. Encourage students to read widely in the classics. The teacher should enrich the program by guiding the gifted child to realize that the classics are a part of the heritage of English speaking people.

2. Help the gifted child appreciate the aesthetic aspects of beautiful literature and develop some appreciation of style and beauty of form.

3. The gifted child needs to acquire an appreciation of a ballad, an ode, epic poetry, lyric poetry, and dramatic poetry. In the field of prose he needs a deeper appreciation of short stories, essays, novels, biographies, travel stories, science fiction, historical fiction, and romantic fiction.

4. The student may write letters that might have been written by a character of fiction or a true character in a situation described by the author. Let the students imagine themselves at Valley Forge and ask them to write letters home about the situation there. Almost any work of fiction will suggest letters.

5. Encourage the dramatic reading of literature.

B. Analysis of types and comparison

1. Use comparative works of literature. The following are published by Noble and Noble Publishing Co., New York 3, New York.

Julius Caesar and Elizabeth the Queen

Hamlet and Other Tragedies

Robinson Crusoe and The Raft

The Raft and The Ancient Mariner

Silas Marner and The Pearl

Romeo and Juliet-Cyrano DeBergerac

Idylls of the King and The King's Henchmen

Comparative Essays-Present and Past

2. He might collect and put into notebooks material from the literature of all nations, illustrating categories of folklore such as exaggeration, mechanical devices, animals, and natural wonders.

3. Form a committee for evaluation of plays and other types of literature.

4. Study the history of books and libraries through the ages and learn how information has been recorded and transmitted through various civilizations. Make a time line to show the history of written communication.

5. Memorize selected poems.

6. Participate in preparing displays for book fairs.

7. Make a collection of myths and legends.

8. Arrange audio-visual presentations of famous stories.

9. Plan on open house where original and unique book reports may be shared. Costumed book parades, quiz shows, puppet shows and character sketches are examples of a few such programs.

10. Tell the story read through pantomime, dance, tableaus, dramatizations, or choral speech, or make a series of pictures to tell the story.

LISTENING SKILLS

"More failures in academic and social growth can be traced to inability to listen than any other single aspect of the language arts. We must not take for granted that a person can listen because he can hear." Elementary English, April, 1959.

Listening skills which are important in the learning process include the following:

1. Listening to detect likenesses and differences in the sound of letters.

2. Listening in order to understand instructions.

3. Listening in order to answer questions.

4. Listening to follow a sequence of ideas.

5. Listening to understand relationships.

6. Listening to detect the main idea in a paragraph.

7. Listening for supporting details.

8. Listening for enjoyment--to interpret literature.

9. Listening to predict outcomes.

10. Listening to detect emotion-laden words, to react to voice, emphasis, and inflection.

11. Listening to develop mental imagery.

12. Tips for listening:

    a. Tie in listening improvement with everyday learning.

    b. Make pupils "sound conscious".

    c. Give listening exercises.

    d. Make certain that pupils know WHY they are to listen, WHAT they are to listen for, and HOW they are to listen.

    e. Don't expect complete learning in one presentation.

    f. Teach listening directly and indirectly.

    g. Remove distractions to good listening and help pupils adjust to those that cannot be avoided.

    h. Develop critera for good listening habits (attention and courtesy).

LISTENING

This We Can Do...

We can make students aware that listening is a very important skill.

1. Listen to debates, discussions, newscasts, and talks to form opinions, to hold discussions, and to draw conclusions.

2. Listen to speakers to pick out main points of their talks and to arrange them in sequence.

3. Listen to radio and television performers to discover the following: errors or difficulties in speech, new words, beautiful and appropriate words.

4. Make and listen to own voice recordings to discover errors or difficulties.

5. Listen to the various sounds in and around school and give an opinion of their effect upon the pupils.

6. Listen for and make a list of sound effects used on a particular radio or television program and find out, through research, how these sounds are produced.

7. Listen to commercials advertising different brands of same product, noting the emotionally-tinged general terms, any statements that are not supported by evidence and conflicting claims of competitors.

8. Listen for a week to broadcasts by a news reporter and a news commentator to note differences.

9. Analyze two talks on the same subject; try to determine why one was more interesting than the other.

10. Listen to an adult lecture on some topic of interest, taking notes for building into an outline which distinguishes between major and minor points.

11. Report to the class on a talk which showed bias on the part of the speaker, and give evidence of the bias.

12. Translate feelings evoked by listening to music, sounds in nature or industrial sounds, through art, verse, story, or dance.

SPELLING

This We Can Do...

1. Use flashcards and puzzles to heighten and strengthen interest in spelling.

2. Encourage students to learn the difficult words from other areas (spelling, syllabication, definition, origin). These words may be compiled and made into a personal dictionary.

3. Maintain a bulletin board list of difficult words in social studies, science, or other areas.

4. Using the week's spelling line as a basis, find as many related words as possible by adding prefixes or suffixes and forming wordsfamilies.

   Example--retort-from torquere-tortum-to twist

   a. retort-to twist back a reply, to turn your opponent's argument against him
   b. distort-to twist out of shape
   c. contortionist-one who can twist his body painlessly
   d. extort-to twist out by force
   e. nasturtium-nose twister, flower so named because of its pungent odor

5. Make a list of new words that have come to our language due to scientific study, invention, or adoption of slang.

   Examples - penicillin

   jet plane

   soap opera

   jet stream

   fallout

   "ham" operator

6. Work on the distinction of pairs of words frequently confused such as: accept-except, affect-effect, principal-principle.

GENERAL ENRICHMENT

1. Read books on advanced levels.
2. Study topics such as government, parliamentary law, or history of his own community, county, or state.
3. Keep a scrapbook in which they record the names and their reactions to books they like and make lists of what they want to read next.

This We Can Expect...

1. Proficiency in the use of regular skills (writing, spelling, language usage).
2. Improvement of the ability to think more critically as they read or listen.
3. Application of learning in language arts to new situations.
4. Development of initiative, originality, and creativity.
5. Assumption of leadership ability.
6. Assumption of responsibility to study independently.
7. Improvement of the ability to use library and reference materials.
8. Assumption of leadership and responsibility, yet having the ability to take his proper place in the group.
9. Derivation of satisfaction from his achievement.
10. Ability to make better use of time.

NOTICE

The following plan has been devised for social studies for a gifted seventh grade. It is important that this plan be understood. For this reason it is requested that this notice be read with care by any teacher interested in the presentation.

The first part of the plan is presented in the form of two plates. Plates I and II contain enrichment plans for each of the problem study areas covered. It is pointed out that these ideas have been used and they have been proved successful.

The second part of the plan is found on pages 1 through 6. These pages contain a series of problem area outlines of the social studies course to be offered. As these units are studied, the teacher will note that ideas for enrichment have been worked into the outline.

Table I contains a guide for using community resources. The information on this table may be used as a guide at any point in the course. Table II contains only five words, but the picture speaks more loudly than words, and it will be a valuable aid in conducting discussion in any classroom.. Table III contains a list of books that the teacher of a gifted seventh grade would find beneficial.

This We Believe...

An effective democracy is directly dependent upon an enlightened citizenry. Enlightened citizens are developed as a product of the environment. The school is one of the strong and moving forces within the total American environment.

This We Need...

Above all else, we need confidence and trust plus cooperation from today's adult enlightened citizenry in order that programs for the "gifted child" may become a reality.

PLATE I

PROBLEM STUDY AREAS - SOCIAL STUDIES ENRICHMENT FOR SEVENTH GRADE

PROBLEM AREA No. 1.

Using the wall map of North America, covered with a transparent overlay, graphically illustrate the geographical factors that have given the United States so many advantages. The class is to find and list evidences of our nation's economic versatility. The film *Global Concept in Maps* (Coronet) will help to bring about the desired learning.

PROBLEM AREA No. 3.

Identify a military unit involved in The War Between the States. It must be a unit from the side opposed to the area the school is in. (A Southern school will select a Northern unit). The students will write to the Director of the archives of the parent state of the military unit selected. The students will learn the number of men lost, the towns from which the men came, and the areas in which the unit saw action. A letter could be written to a seventh grade class in one of the cities or towns that supplied men to the military unit. Information can become exciting and alive for the students in this class...Establish contrasting maps which shall be illustrated. Title the maps, "The Days of Forty-nine And Now." On the first map show the pioneer routes to California. Along the routes, sketch covered wagons, ships, men on horseback and on foot. On the second map, draw in some main east-west highways and show railroad and air r routes. The advance to the Pacific is brought to life in Encyclopedia Britannica film, *The Westward Movement*.

PROBLEM AREA No. 2.

Report on the possible route of migration of the American Indians. Encourage making charts and posters showing the routes...Explorations stimulate interest. Take advantage of this fact with a bulletin board display of adventure book jackets...Utilize the visual aids library to show the Revolutionary period. It was a period of action and an action film will have real value. The Encyclopedia Britannica film *The American Revolution* brings out the desired learnings...In the Revolutionary period we see a desire for self-government. The strong lesse on here is that independence is dependent upon an active demand. This demand is not just a desire or longing but the desire plus the ability plus the willingness to pay the price.

PROBLEM AREA No. 4.

Graphically illustrate the meaning of an economic cycle. Students are to construct original graphs on the various topics of the problem area: (1) Prepare graphs and charts on statistics about the Panama Canal. Such information as miles saved, average yearly tonnage, cost of construction or average yearly revenue may be used. WORK FOR THE COMPLETE UNDERSTANDING OF GRAPHIC PRESENTATIONS. Test this understanding by asking members of the class to explain graphs selected at random from magazines and trade journals.

PROBLEM AREA No. 5.

This problem area introduces a great number of words that may be stressed in order that the students show growth through the command of new words. These words may be assigned to a blackboard list or arranged on a bulletin board. The theme should be "Strengthen Your Social Studies Vocabulary". Some of the words that are introduced are listed below:... infantry, artillery, neutrality, trench, armistice, blockade, mandate, salient, etc.

PLATE II

PROBLEM AREA No. 6.

Establish committees to study social life, customs, or styles of dress in the villages and the fast growing cities. The treatment given to the various socio-economic groups in each area will give meaning to the entire problem area...Committee presentations illustrated by posters or graphs and, in some cases, models followed by questions from the class to members of the committee will stimulate interest in the era.

PROBLEM AREA No. 7.

If some students are especially interested in literature, they may be encouraged to read and criticize some American authors of the period.... Students who are very good in science can report on such scientific leaders as Bell, Eastman, Carver, and Edison or on great scientific discoveries. ...Students can make a time line that shows graphically how much more has been accomplished in the last two hundred years than was accomplished in the period from 1 A.D. to 1750. This type of effort will make a statement concerning the effect of the Industrial Revolution meaningful to the class...Show Encyclopedia Britannica film, The Industrial Revolution.

PROBLEM AREA No. 8.

Establish committees to investigate and report on the similarities and differences between the student government and the local, state, and federal governments.

PROBLEM AREA No. 9.

The Newspaper in The Classroom, Publication 400-7, Winston-Salem City Schools point out the value of a subscription to a local daily paper. The newspaper becomes a valuable "text" for teaching skills in the language arts as well as in the social studies areas. Committee assignments in various areas such as local, state, national, European, Asian, Latin American, etc., must be directed toward a sound problem solving approach. It is pointed out that the ninth Problem Area must be a continuing area of study. It goes into operation from the first week of school. The year of work becomes more meaningful as comparative findings are discerned during committee reports, discussion periods, and final critique.

PROBLEM AREA No. 10.

In order to compare a democrady with a totalitarian government, the teacher will direct students into many areas. One example is to set up a score board of evidence to be filled in by the students. For example, the word "Incentive" could have a line leading from it to a picture from a magazine that shows a drab and colorless state store on the totalitarian side, while another line would lead to a picture of an attractive U.S. department store. A second bit of evidence could be a close-up view of a group of people in a totalitarian government rally as opposed to a picture of Americans at a political convention. Ask the following question: Which group looks as though they really wanted to be in attendance? Of course, we will see that totalitarian governments have some advantages. Military machines and leaders who can make snap decisions,bbecause they do not have to answer to the people, are advantages. We can show these, however frightening they may be,as being insufficient to bring a free world to its knees. Hitler, Mussolini, and Tojo (Recall past learning) enjoyed all the so-called advantages of totalitarianism and lost their empires.

CAUTION: The enrichment plans outlined in Plates I and II are not to be considered as being rigidly assigned to the specific unit. These ideas are, with slight modifications, interchangeable and their use in any unit should be decided on by the teacher.

This We Can Do...

PROBLEM AREA No. 1.
THE BACKGROUNDS OF AMERICA

I. The character of the people
  A. Courageous
  B. Men and women of conscience
  C. Energetic and inventive
  D. Men and women of vision

II. Location (Geographical factors)
  A. Land and water hemispheres
    1. Define hemisphere
    2. Define meridian
  B. The North Temperate Zone
    1. Earth contains 55,000,000 square miles of land
    2. Less than half of this land (25,000,000 square miles) is habitable
    3. 5,000,000 square miles are deserts, mountains or dense tropical jungles.

  NOTE: (Using map and overlay) Show that the entire U. S. is in the North Temperate Zone. The U. S. has 3,033,387 square miles of the finest land on the face of the earth.

  C. Atlantic and Pacific Oceans acted as protection and gave the U. S. the time it needed to develop its great resources

III. Natural divisions (Geographical factors)
  A. Mountains
  B. Interior Plains
  C. Coastal Plains
  D. Uplands and plateaus

PROBLEM AREA No. 2.
THE ESTABLISHMENT

I. Pre-Columbian Period

II. The Colonial Period
  A. Explorations
    1. Spanish
    2. Portuguese
    3. French
    4. English
  B. Reasons for English success
  C. Unrest
    1. Reasons
    2. Reactions and counteractions
    3. Results

III. Revolutionary Period
  A. Political
  B. Economic
  C. Cultural

IV. Independence
- A. Political thinking
  - 1. Conservative
  - 2. Radical
- B. Strength
  - 1. States
  - 2. National government
- C. Weakness of Articles of Confederation
- D. Annapolis Convention
  - 1. Background
  - 2. Proposals
- E. Constitutional Convention
  - 1. Delegates
  - 2. Authority
  - 3. Action
  - 4. Results

V. Launching the government
- A. Political party development
- B. Foreign Affairs
- C. New lands
- D. War of 1812

PROBLEM AREA No. 3.
DISTRUST, WAR AND A NEW UNION

I. Sectionalism vs. Nationalism
- A. Groups with special interests
  - 1. Debtors
  - 2. Creditors
  - 3. Shipping industry.
  - 4. The South
  - 5. The New West
- B. The Supreme Court
  - 1. Chief Justice Marshall
  - 2. The Court's rise to power
- C. Foreign policy

II. Movement to the Pacific

III. North-South issues
- A. In respect to Pre- Revolutionary War Boundaries
- B. In respect to new territory
- C. Compromises
- D. Legal actions
- E. The Republican Party

IV. The Union Preserved
- A. Reconstruction
- B. The Solid South

PROBLEM AREA No. 4

I. Troubles in the West

II. President Cleveland's trying times
   A. Depression (Discover the business cycle and high and low eras of spending)
   B. The protective tariff issue
   C. Trouble with labor
   D. Foreign affairs

III. The period of big business controlling the government
   A. No governmental controls
   B. Big business develops trusts
   C. Economic results

IV. Extreme Nationalism (Imperialism)
   A. Cuba
   B. Puerto Rico
   C. Guam
   D. Philippines

V. Theodore Roosevelt
   A. "Trust Buster"
   B. Panama Canal

VI. The Progressive Movement
   A. Discontent
   B. Political crusades
   C. Woodrow Wilson

PROBLEM AREA No. 5
A GLOBAL WORLD

I. America and the First World War
   A. Outbreak of war in Europe
   B. American neutrality
   C. America and the war effort
   D. Japan's actions in the Far East and its shadow on the world war of the future
   E. The Peace Treaty

II. The United States between two wars
   A. Business
   B. Depression
   C. The New Deal
   D. Italy, Germany, Japan and war clouds

III. World War II in Europe
   A. American neutrality
   B. Pearl Harbor
   C. U. S. enters the war

IV. Global war for U. S.
  A. Africa
  B. Europe - Large land mass campaigns
  C. Pacific - Naval campaigns and amphibious operations
  D. End of war in Europe
  E. Atomic power - End of war in the Pacific

V. Post war years
  A. The United Nations
  B. The Iron Curtain
  C. Red China
  D. Korea
  E. The Marshall Plan
  F. N.A.T.O.
  G. Treaty with Japan
  H. Eisenhower's election
    1. First term
    2. Illness
    3. Re-election

PROBLEM AREA No. 6
AMERICA BEFORE THE WAR BETWEEN THE STATES

I. Life in the new republic
  A. The villages and their culture
  B. The city develops
    1. Three different socio-economic classes develop
    2. The discontent of the lowest socio-economic group
    3. Plantation cultural and economic development

II. The New York Stock Exchange and another look at the changing economy

PROBLEM AREA No. 7
INDUSTRIALIZATION

I. Effects of the Machine Age

II. Big business

III. Large scale industry

IV. Women enter the labor market

V. New industries
  A. Steel
  B. Electricity
  C. Automobile
  D. Aviation
    1. Propeller
    2. Jet
    3. Rocket
  E. Nuclear power

VI. Labor problems

V
- A. In Colonial America
- B. Rise of labor movements
  - 1. Trades
  - 2. Unskilled labor
- C. Labor legislation
  - 1. Originally opposed
  - 2. Eventually gave complete protection
  - 3. Attempting to control
- D. Depression
- E. War

PROBLEM AREA No. 8
AMERICA'S ACHIEVEMENT AND PROMISE

- I. Making the government more democratic
  - A. The political party boss
    - 1. A free press fights corruption in politics
    - 2. Reform movements
  - B. The Progressive movement of the early 20th century

- II. Conservation of natural resources
  - A. Theodore Roosevelt
  - B. The New Deal

- III. Legislation protects the best interests of the people

PROBLEM AREA No. 9
U.S. RELATIONS WITH HER NEIGHBORS

NOTE: This study will continue throughout the whole school year. A scrap book will be begun and a committee of reporters will be selected to keep the scrap book up to date. All members of the class will be encouraged to bring in magazine articles and newspaper clippings that are related to the subject. The weekly social studies newspaper will be of great help in building understanding. The local daily newspaper, whose use is listed on Plate II, will also serve to enrich this area of the study.

- I. Past events
  - A. Monroe Doctrine
  - B. Discussion (See Table II)
  - C. Critique of the study

PROBLEM AREA No. 10
THE GOVERNMENT OF THE UNITED STATES

I. This area will examine the structure of the national government as well as the state government.

II. A democratic government will be compared with a totalitarian form of government.

III. Our struggles for better government throughout the history of the nation, which have been stressed in other portions of the course, will be reviewed and pointed to with pride.

IV. The growth of the importance of the individual citizen of the U. S. from colonial times to the present will be treated at length.

This We Can Expect...

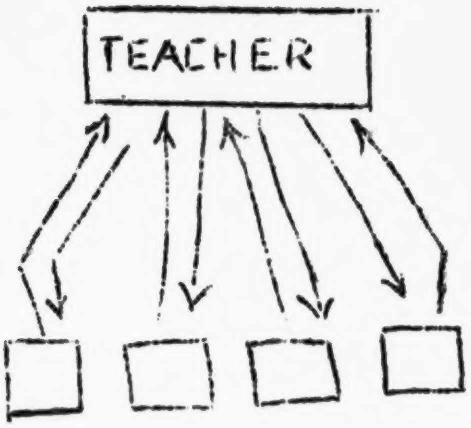
The students will come to the realization that they have a responsibility to help build a more democratic world. We will develop this realization through a federation of school subjects which deal with human relationships - history, geography, economics, civics, sociology and family life. With critical thinking and with stress upon the problem solving approach we will bring forth the leaders so vital to the security of all people everywhere.

TABLE I

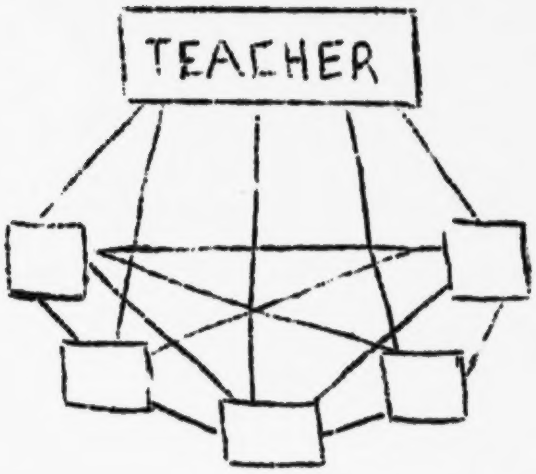
GUIDE
FOR USING COMMUNITY
RESOURCES

RULE	ADDITIONAL DATA
Know the child	1. His place in the group 2. His travel experience 3. His special ihterest and hobbies
Know the community resources	1. Historical 2. Industrial 3. Cultural 4. Agricultural 5. Natural 6. Resource people
Use resources to improve	1. The individual 2. Cooperation within the group 3. Cooperation among groups
Field trips	1. Plan 2. Make preliminary trip 3. Teacher-pupil planning 4. Group responsibility 5. Class discussion and evaluation

AVOID



STRIVE FOR



Rules for Conducting Discussion

1. State problems clearly.
2. Keep class on the main problem.
3. Respect each student's ideas.
4. Motivate in order to get full participation. (See drawing above)
5. Raise questions on issues.
6. Help in coming to conclusions - BUT work toward having the class reach sound conclusions on their own.
7. Summarize.

TABLE III

A SUGGESTED LIST OF REFERENCES FOR THE SOCIAL STUDIES TEACHER'S BOOK SHELF

Anderson, William, *The National Government of the United States*, Henry Holt and Co., New York, 1946.

Beard, Charles A., and Mary R. Beard, *A Basic History of The United States*, Doubleday, Doran and Co., New York, 1944.

Canfield, Leon H. and Howard B. Wilder, *The Making of Modern America*, Hughton Mifflin Co., Boston, 1954.

Dabney, Virginius, *He Made the Court Supreme*, (Reprint from September 24, 1955 issue of the Saturday Evening Post), The Curtis Publishing Co., Philadelphia, 1955.

Hicks, John D., *A Short History of American Democracy*, Hughton Mifflin Co., Boston, 1946.

Muzzey, David Saville, and Horace Kidger, *The United States*, Ginn and Co., Boston, 1953.

Muzzey, David Saville, *A History of Our Country*, Ginn and Co., Boston, 1936.

Potter, David M., and Thomas G. Manning, *Nationalism and Sectionalism In America 1775-1877*, Henry Holt and Co., New York, 1949.

Swisher, Carl Brent, *American Constitutional Development*, (Second Edition), Hughton Mifflin Co., Boston, 1954

Arithmetic Program For Seventh Grades

This We Believe...

The gifted child in arithmetic needs deep insight into the structure of the number system so that he can apply skill in computation and problem-solving to all mathematical situations. He needs to gain an understanding of the nature of reasoning and the nature of proof.

An underlying premise to the proposition of learning arithmetic meaningfully is the principle of self-discovery. The classroom should provide opportunities for learning by discovery. A student will not discover facts, principles, or processes, however, by having the teacher merely exhort him to make a discovery about the work under consideration.

The classroom in arithmetic should contain three kinds of materials: exploratory, visual, and symbolic. The teacher should understand that the use made of materials is the essential factor in the success of the laboratory method in teaching arithmetic.

This We Need...

Materials

1. Compasses (blackboard and individual)
2. Protractors (blackboard and individual)
3. Slide rule
4. Meter sticks
5. Yard sticks
6. Rulers (graduated to tenths and hundredths)
7. Cube of separable parts
8. Perimeter board
9. Geometric figures
10. Carpenter's rule
11. Tape line
12. Thermometers
13. Transit
14. Flash cards (percentage)
15. Flannel board
16. Films and filmstrips

Suggested Books and Booklets

1. Corle, Clyde G., *Building Arithmetic Skills with Games*, The Instructor Handbook Series
2. Freeman, *Fun with Figures*, Hunting, 1946
3. Hart, *Mathematics in Daily Use*, Heath, 1958
4. Hogben, *Wonderful World of Mathematics*, Doubleday, 1955
5. Hogben, *Mathematics for the Millions*, Norton, 1951
6. Meyer, *Fun with Math*, World Publishing Co., 1952
7. Northrop, *Riddles in Math*, Van Nostrand, 1944

Problem Areas in Arithmetic - 7th Grade

I. Social Application A. Mental Arithmetic B. Measurements C. Understanding Per Cents	II. Graphs A. Types of Graphs B. Models C. Charts and Maps D. Scale Drawing
III. Business Arithmetic A. Banking B. Saving Bonds C. Stocks and Bonds D. Insurance E. Taxation F. Home Ownership	IV. Using Formulas in Problem Solving A. Business B. Perimeter C. Area D. Volume E. Problems
V. Algebra A. Ratio and Proportion B. Sign Numbers C. Simple Equations D. Square Root and Powers	VI. Informal Geometry A. Basic Construction B. Descriptive Properties of Most Plane and Solid Figures C. Lines and Angles D. Congruence and Symmetry
VII. General Enrichment	VIII. Appendix- General terms and Vocabulary

I. Social Application of Math

This We Can Do....

A. Mental Arithmetic

1. Estimate answers to problems and compare computed answers with estimated ones.
2. Estimate answers with mixed numbers by computing with the whole numbers involved and determining what the real answer will be.
3. Estimate size of certain areas. Check by accurate measurement.
4. Estimate weight of package to be mailed and cost of mailing, check by weighing and investigating and explaining postal zones.
5. Solve problems mentally by breaking numbers up into tens, hundreds, thousands, etc.
6. Use accepted short cuts to solve problems mentally.
7. Help children to experiment with various ways to check problems, for example, the casting out of nines, the reducing to a single digit, or the use of the civil servide check in addition.
8. Encourage children to solve problems without paper and pencil.

B. Measurements

1. Investigate and report on cost of sending books and packages via U. S. mail according to various classes of mail.
2. Investigate how the amount of linoleum or carpeting for a room is determined and how cost is computed.
3. Find out lengths of time and amount of money needed to take trips in U. S. by different means of travel.
4. Investigate the ways time has been told down through the ages.
5. Investigate the history of measures and the development of new measures.
6. Investigate local rates for water, electricity, and gas.
7. Investigate how many miles a spot on the equator moves.
8. In a Canadian village 300 tons of ice are stored from a pond. If a family averages 1500 pounds a season, how many families can be supplied?
9. How many ½ pt. bottles of mineral water can be filled from 650 gallons?
10. A school paper has 12 sheets each issue. 480 copies of each issue are run. If there are 10 issues per year, how many reams of paper are needed?
11. Sound travels about 1100 ft. per second. We heard the explosion from a flash of lightning 2½ seconds after we saw it. How far away was the flash?
12. When it is noon in St. Louis, what time is it in New York? Chicago? Denver? San Francisco?
13. If it is noon on the zero meridian, what time is it on the 180^0 meridian?
14. Using the Metric Table of Linear Measure, find:
    a. How many millimeters are in a decimeter?
    b. 3 cm.=__________ mm.
    c. 95 mm.=__________ cm.

d. 640 mm.=__________ m.
e. 4 km.=____________ m.

15. Using the metric scale on a measuring tool, draw line segments these lengths:
    - a. 7 cm.
    - b. 6.7 cm.
    - c. 20 mm.
    - d. 2.3 cm.
    - e. 35 mm.

16. Compare the Metric and American units of measure.

17. Using the metric system of weights find:
    - a. How many grams are in a kilogram?
    - b. How many kilograms are in 4000 grams?
    - c. A new-born baby weighs 3300 grams. How many kilograms is that? How many pounds is it?

18. Using the liquid metric system tell how many cubic centimeters are in:
    - a. 2 liters
    - b. 14 liters
    - c. 2.9 liters

19. A gasoline tank contained 18.5 gallons of gasoline. Change this to liters.

20. Mrs. Jones bought remnants as follows: 1 yd. 16 in.; 2 ft. 20 in.; 1 yd. 2 ft. What was the total yardage?

21. Add:

$$\begin{array}{rrr} 45^{\circ} & 18' & 12'' \\ 32 & 43 & 51 \\ 28 & 24 & 8 \\ \hline \end{array}$$

22. Subtract:

$$\begin{array}{lll} 7 \text{ sq. yds.} & 4 \text{ sq. ft.} & 80 \text{ sq. in.} \\ 2 & 7 & 96 \\ \hline \end{array}$$

23. Multiply:

$$\begin{array}{r} 2 \text{ hr. } 13 \text{ min. } 10 \text{ sec.} \\ 7 \\ \hline \end{array}$$

24. Divide: $10 \overline{)\ 13 \text{ bu. } 1 \text{ pk. } 6 \text{ qt.}}$

25. Reduce 4 acres to square rods. to square feet.

26. If each pupil should have 16 sq. ft. of space, how many square yards will 30 pupils need?

27. 12 cu. ft., 256 cu. in.= ____________ cu. in.

C. Understanding per cents

1. The price of a leather jacket was $35.00 To this was added 10% Federal excise tax and 3% state sales tax. What was the total cost of the jacket?

2. Trousers were advertised in this manner on a sale bill: "All $15.95 reduced 20%." What did the trousers cost on sale?

3. A field 120 rods X 216 rods was increased 20% in size. What is the area of the new field? (Express answer in acres to nearest tenth.)

4. 250% of $210=____________ more than $210.

5. 175% of $500.

6. 484 pupils of the 520 enrolled were present today. What per cent was that?

7. Mr. Allen receives a commission of 15% on his sales. How much must he sell to get a commission of $80.00?

8. Jim spent $2.40. This was 60% of his savings. What was his savings?

9. Judy paid $3.50 for a blouse that had been marked down 30%. What was the original price?

10. A factory produced $600,000 worth more goods this year than last. This was 8% of last year's production. What was the value of last year's goods?

11. An article marked $8.00 is to be reduced $2.00. For what will it be sold? What is the $8.00 called? What is the $2.00 called? What is the $6.00 called?

12. Find the discount and net price in these exercises:

Marked price	Rate of discount
a. $32.00	5%
b. $250.00	12%
c. $4250.00	27%
d. $765.00	2½%

13. A table listed in a catalog at $37.50, cost the dealer $22.50. What rate of discount was he allowed?

14. A dealer bought 12,800 board feet of lumber at $62.00 per M. He was allowed a 3% discount for cash. How much was the discount? (nearest cent)

15. A dealer bought furniture listed at $500 with successive discounts of 40% and 10%. Find what he paid for furniture.

16. A salesman receives a salary of $150.00 per week, plus a 2% commission on his sales. If he sold $3,260 one week, what was his total salary?

17. The net proceeds are $9600; the rate of commission is 4%. Find the commission. The sales price.

18. After an agent had deducted $319.20 for his commission, he sent the owner of a house a check for $4240.80. What rate of commission did he charge?

19. A merchant took in $7500.00 one week. His expenses were: cost of goods $4000.00; clerk hire $720.00; rent, electricity, etc. $850.00. Find his margin and profit.

20. Mr. Jones bought eggs for 32¢ a dozen and sold them for 58¢ a dozen. His overhead was 30% of the cost. Did he make a profit? If so, how much?

21. A television set sells for $350.00. Margin is 40% of sales price. If expenses are $17.50, what is the per cent of profit?

22. Steak sold for $1.25, and the price increased to $1.50. What per cent of increase was this?

23. After a football game, Joe, who weighed 178 pounds at the start, weighed 169.1 pounds. What per cent of weight had he lost?

24. Find 35 increased by 10% of itself.

25. Find 35 decreased by 10% of itself.

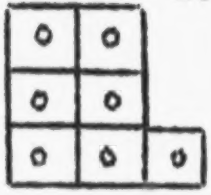
CAUTION: These are representative problems of what the teacher can do.

II. Graphs

This We Can Do....

A. Types of graphs

1. Dot Pictograph-Pictograph represented by dots instead of symbols require the reading of the title and the legend for information. The pictograph at the left is entitled; Density of Population in a Certain State. Each square represents about 8000 square miles. Each dot represents about 500,000 people.



   a. What population is represented?
   b. What area is represented?
   c. What is the density per square mile?

2. Bar graphs
   a. If 1 space = 10, how many spaces equal 34? 67? 89? 100? 124?
   b. Using 1 space to represent 5000 people, develop a bar graph to represent 51,000; 17,250; 60,185.

3. Line graphs
   a. Use a line graph to show the paper sales Bob had in a week; Monday 42; Tuesday 46; Wednesday 44; Thursday 48; Friday 50; Saturday 58; and Sunday 70.

4. Circle graph
   a. In a recent year, 41% of the fatal accidents from motor accidents occurred during the day and 59% at night. Snow this on a circle graph.
   b. In a class of 28 pupils the final marks were: A's, 4; B's, 7; C's, 12; D's, 3; F's, 2. Draw a circle graph to show this.

5. Other types used are:
   a. Divided Horizontal Bar Graph
   b. Time Lines
   c. Pictograms
   d. Frequency Curves
   e. Comparison Graphs

B. Models

1. Construct models of various sorts such as geometric figures.

2. Construct models of buildings, airports, airplanes, etc.

C. Charts and maps

1. What information is given on a weather map?

2. Learn to locate places on a road map

3. Investigate the scale to which maps are drawn.

4. Provide opportunities for gifted children to consult maps, charts, graphs, and diagrams and to solve problems from these materials. Let them show arithmetical data in tabular and graphic form.

D. Scale drawing

1. Students showing interest in architecture, surveying, etc. can be assigned a project with actual measurements drawn to scale. Small groups work together to compute the heights of the school buildings, trees, telegraph poles, etc.

2. They use tapes, range poles, angle mirrors, and homemade transit to collect the data and are then required to draw the results to scale.

3. Make a scale drawing of an airport showing runways and approaches.

4. Draw plans for rooms, gym, etc. to scale.

5. Technique of enlarging and drawing to scale.

6. Make a graph involving more items, scaling them for finer distinction and interpreting the meaning behind the facts.

7. Make graph showing increase in population and shift of centers of population.

CAUTION: These are representative problems of what the teacher can do.

III. Math in Business

This We Can Do:

A. Understanding money
  1. Banking and accounts
    a. Mr. Smith lives in New York City. He writes a check to a St. Louis business firm. Tell two ways in which the check may get back to Mr. Smith after it has been cashed.
    b. Inquire at your local bank about securing sample copies of deposit and withdrawal forms, and other banking forms used by typical depositors.

  2. Simple interest
    Find:
    a. $750 at 6% for 46 days
    b. $850 at 2½% for 6 mo. 12 days

  3. Amount
    Find:
    a. $400 at 4½% for 4 mo.
    b. $250 at 3¾% for 1 mo.
    c. $600 at 6% for 1 yr. 9 mo.

  4. Bank discounts
    Banks often deduct the interest in advance. This interest is called bank discount.
    a. How are interest and bank discount different?
    b. Find the bank discount on $1250.00 at 6% for 60 days.
    c. Find the difference in time in years, days, and months between: (1) Jan.1, 1952 - May 7, 1956
      (2) Your date of bifth and today.

  5. Installment buying
    a. The cash price of a washer is $175.00. Mrs. Anna pays $50.00 down and the remainder in 12 installments of $11.50 each. How much will the washer cost? How much would she have saved by paying cash?
    b. A watch can be bought for $97.50 cash, or $10.00 down and $8.00 a month for 12 months. What could be saved by paying cash?

  6. Compound interest
    a. An account has $100 in it. What will the amount be at the end of 2 years if compounded at 4%.
    b. Find the simple interest on $100 at 3½% for 2 years. How much less is this than the compound interest?

  7. Mortgage facts- a mortgage is a legal paper giving the lender right of ownership until debt is paid.
    a. A house is purchased for $15,500.00 under a mortgage plan.
      (1) The down payment is 20%. How much is that?
      (2) What is the remainder owed?
      (3) The monthly payment amounted to $58.00 for a 25-year period. What was the total paid for the house?

B. Saving bonds- A bond is really a promissory note, promising to pay at a certain rate of interest for the use of money for a certain length of time. The most familiar is probably the U. S. Savings E Bond. These may be bought for $18.75, $37.50, $75.00, $375.00 or $750.00. The value of these at maturity is $25.00, $50.00, $100.00, $500.00, and $1,000.00 respectively.

1. What is the total interest on each bond?
2. A bond was cashed for $500.00 at maturity date. What % of interest had it earned?

C. Stocks and bonds- Corporations sell bonds. The amount for which the bond is written is called its face or par value. The interest is paid to the owner annually or semi-annually. The price of the bond is not always its par value. This price is called a quotation and is a percentage of the par value. Thus, a bond quoted at 94% means it can be bought for 94% of its face value. Bonds are often bought and sold through brokers who charge a fee called brokerage.

1. Find the price of four $1,000.00 bonds quoted at 92, brokerage ½%.
2. Find the cost of buying eight $1,000.00 bonds, quoted at 101½, without brokerage.

D. Insurance- When an individual buys insurance, the contract is called a policy. The amount of the policy is called the face of the policy. The cost of insurance is called a premium.

1. Fire insurance- The cost of premium of fire insurance depends on many things: types of building, use of building, location of building, and kind of fire protection a locality has.
   a. A house worth $12,500 was insured for 80% its value. What was face of the policy? If the rate is 40¢ per $100.00, what was the yearly premium?
2. Automobile insurance
   a. Mr. Hanes has a car worth $3,200.00. To protect himself against theft, fire, hail and other losses except collision, he takes out comprehensive insurance. The rate is $1.25 per $100.00. What is the premium?
   b. He also takes out liability insurance to pay for damages his car can do to property or people. Personal liability will pay for bodily injuries; property damage liability will pay for damage to another person's property. Mr. Hanes liability insurance is $52.80 and the property damage $45.00.
   c. Mr. Hanes also takes out $50.00 deductible insurance. This would pay the cost over $50.00 for damages he had caused to his car. The cost of this would be $78.00. What is the total cost of his insurance?

3. Life insurance- The types of life insurance fall into 4 general forms:
   a. Ordinary life
   b. Limited life
   c. Endowment
   d. Term

E. Taxation
   1. Property tax
      a. Find the property tax to the nearest cent:
         (1) Assessed Valuation $4200.00. Rate per $100.00 at $4.38.
         (2) Assessed Valuation $12800.00. Rate per $100.00 at $4.38.

   2. Sales tax
      a. At the rate of 3% find the sales tax on a radio selling for $89.50

   3. Excise tax
      a. A tax on telephone calls is 10%. If long distance calls amounting to $12.42 were made, what was the tax?
      b. A movie ticket is 80¢ plus 10% tax. What was the cost per ticket?

F. Home ownership
   1. Study home ownership
      a. Real estate
      b. Home ownership
      c. Floor plans
      d. Mortgages
         (1) F.H.A.
         (2) G.I. loans
         (3) Chattel
      e. Ownership or rental

   2. Studying the cost of building a house involving:
      a. Kinds of materials
      b. Fixtures
      c. Construction
      d. Installation labor costs, etc.

CAUTION: These are representative problems of what the teacher can do.

IV. Using Formulas in Problem Solving

A. Business

1. A problem in per cent involves three quantities. These are (1) the whole or base, (2) the part or percentage, and (3) the per cent or rate per hundred.
   - a. Percentage= rate X base
     - 1. A school has an enrollment of 1460 pupils. If 95% are present, how many pupils are in attendance?
     - 2. 30% of the 210 men in the room are veterans of World War II. How many are veterans?
   - b. Rate= percentage ÷ base
     - 1. A rug priced at $480.00 was reduced to $384.00. What was the per cent of reduction?
     - 2. A school reported an absence of 52 pupils. If 260 are enrolled, what per cent is absent?
   - c. Base= percentage ÷ per cent (changed to decimal)
     - 1. 40% of a scout troop plan to go on an overnight hike. If 70 scouts go on the hike, how many are in the troop?
     - 2. A factory produced $500,000 worth more goods this year than last. This was 10% of last year's production. What was the value of last years goods?

2. Discount ÷ marked price= rate.
   - a. Roller skates listed for $18.00 were sold for $15.00. What was the rate of discount?
   - b. A ball quoted for $9.50 was sold for $7.60. What rate of discount was allowed?

3. Sales-commission= net proceeds
   - a. A house was sold by a real estate agent for $15,500. He received 7% commission. What did the owner redeive?
   - b. The commission is $469.00 and the rate is 7%. What are the sales?

4.
   - a. Selling price- cost= margin
   - b. Margin- expenses= profit
   - c. Loss= expenses- margin

Complete these:

	Cost	Margin	Expenses	Profit	Loss	S.P.
(1)	$25.00	____	$7.00	$6.50	____	____
(2)	$ 6.00	$1.00	$1.00	____	____	____
(3)	$ 6.75	$2.40	$3.05	____	____	____

5.
   - a. $I= prt$
   - b. Amt.= principal+interest
     - 1. See problem area no. III A

6. Money to be raised= rate assessed valuation
   - 1. See problem area no. III E

B. Perimeter

1. Rectangle : $p= 2l+2w$
2. Square : $P= 4s$
3. Parallelogram: $p= 2l+2w$
4. Triangle: $p= 3s$

   $p= a+b+c$

   $p= 2a+b$

5. Octagon: $p=8s$
6. Pentagon: $p=5s$
7. Hexagon: $p=6s$

C. Area
1. Rectangle: $A= bh$
2. Square: $A= s^2$
3. Triangle: $A=\frac{1}{2}bh$
4. Trapezoid: $A=\frac{(b+b) \times a}{2}$
5. Circle: $A=\pi r^2$
6. Cylinder: $A=d\pi h$
7. Lateral area of cone: $A=r\pi sh$
8. Sphere: $A=4\pi r^2$

D. Volume
1. Rectangular prism: $V=lwh$
2. Cube: $V=e^3$
3. Triangular prism: $V=\frac{(bxa) \times h}{2}$
4. Pyramid: $V= \frac{lwh}{3}$
5. Cylinder: $V=r^2\pi h$
6. Cone: $V=r^2\pi h$
7. Sphere: $V= \frac{\pi r^3 \times 4}{3}$

E. Use these formulas to find:
L. Which has more floor surface, a room 23' x 17' or one 6½ yd. x 7 1/3 yd. How much larger?
2. A cotton rug for a room 9' x 12' cost $129.60. What is that per sq. ft.?
3. Which is larger and how much, a 10" square paper or a paper containing 10 sq. inches?
4. How many acres in a football field 120 yds. x 50 yds.? (Carry to tenths)
5. Find the perimeter and area of these parallelograms:
   (1) Base 12ft., side 8 ft., alt. 4.ft.
   (2) Base 2.56 cm. , side 2.26 cm., alt. 4.78 cm.
6. Find the area of these triangles:
   (1) Base 12" - alt. 8"
   (2) Base 5 yd. - alt. 6½ yd.
7. A playground is shaped like a trapezoid. The parallel sides are 1000 feet and 800 feet long. The width or altitude is 300 feet. What is its area in acres?
8. A plate is 6 in. in diameter, another is 12 in. in diameter. How do their circumferences compare?
9. A circle is 418 inches in circumference. What is the diameter?
10. A fountain has a base of 20 ft. in diameter. What is its area? (pi= 3.14)
11. A pony is tethered to a rope 42 ft. long. Over what area can he graze? (Pi= 3 1/7)
12. A circular table measures 14 ft. 8 inches around. What is its radius?
13. A triangular scarf is 28 inches long and has an altitude of 21 inches. Find its area.

14. A trunk is 3 feet long, 22 inches wide, and 17 inches deep. Find the volume in cu. ft.
15. A cellar is 40 feet long, 30 feet wide, and 9 feet deep. How many loads of dirt were removed from it? (A load is one cubic yard).
16. Every pupil is allowed 300 cubic feet of air. What is the largest number of pupils in a room 28 feet long, 24 feet wide, and 11 feet high should have?
17. A square prism contains 480 cubic inches. It is 10 inches tall. How many square inches in its base?
18. A 5 inch cube is cut from the corner of a 10 inch cube. What per cent of the large cube remains?
19. How many gallons in a tank 4 feet X 3 feet X 6 feet?
20. A triangular prism has a base 8 inches long and 5 inches wide. Its height is 16 inches. Find its volume.
21. How many square inches are needed to wrap a box 12 inches X 10 inches X 6 inches? Allow 10 sq. in. for overlapping.
22. A sandhopper is in the shape of a pyramid with the vertex below. How many loads of sand in a hopper 12 feet square and 12 feet deep?
23. A farmer has corn in a pyramid-shaped hopper. If 2½ cu. ft. equal one bushel of corn, how much corn will be in a hopper 12 ft. square and 18 feet deep?
24. Find the volume of a cylinder whose radius is 9 inches and whose altitude is 12 inches.
25. A gas tank 280 feet in diameter and 40 feet high will contain how many cubic feet of gas?
26. Find the total surface of a can 14 inches in diameter and 16 inches high.
27. Find the volume of a cone with a diameter of 2 inches and an altitude of 4 inches.
28. A bowl is in the form of a hemisphere. How many cubic inches will it contain if its radius is 3 inches?
29. Find the volume of a sphere with a radius of 4.2 ft.
30. How many cartons 3" X 2" X 2" can be packed into a box 18" X 12" X 12"?

CAUTION:

These are representative problems of what the teacher can do.

V. Algebra

This We Can Do:

A. Ratio and proportion

1. Jack is 16 years old. His brother is 24 years old. What part of the brother's age is Jack? What is the ratio of the brother's age to Jack's?
2. Do these ratios from a proportion:
   - a. 6:3 = 2:1
   - b. 2:3 = 60:90
   - c. 6:24 = 24:96
3. Solve and check:
   - a. $5/12 = n/60$
   - b. $6/14 = x/42$
   - c. $2/3 = r/40$
4. a. 1.5 cm. to 7.5 cm.
   - b. 28 to 8
   - c. 14 oz. to 3 lbs.
5. If 3 grapefruit sell for 37¢, what will be the cost of 1 dozen?
6. If 2 cards cost 13¢, what will 25 cards cost?
7. Using the principle of "product of means equals product of extremes", tell whether or not the following are proportions:
   - a. 1:4 = 4:16
   - b. 12:20 = 48:80
   - c. 2:7 = 7:2
   - d. 125:50 = 25:20

B. Sign numbers

1. Write these as signed numbers:
   - a. An increase of $5.
   - b. A loss of 10 points
   - c. 20^0 above zero.
2. In the following write the equation and solve:
   - a. After an increase of $22.50 a man earned $357.00 a month. What was the original salary?
   - b. Jane has 140 more stamps than Ann. If Jane has 982 stamps, how many does Ann have?
   - c. Mr. Smith sold a tractor for $840.00. This was 2/3 of what it cost him. What had he paid for the tractor?

C. Simple equations

1. a. $\frac{x}{2} + 7 = 13$
   - b. $x - 3\frac{1}{2} = 12$
   - c. $2m - 1.5 = 6.5$
   - d. $7x + 10 = 38$
2. The product of any two factors; such as, 3(a + b) can be found as follows: In 3(a + b) every part of the (a + b), called the binomial, must be multiplied by the 3.

   $3(a + b) = 3a + 3b$

   $5(a + 2b + c) = 5a + 10b + 5c$

   ((a + 2b + c) is called a trinomial)

   Solve the following:
   - a. $3(a - 2b)$
   - b. $16(x + 1 + 2c)$
   - c. $6(b + 8c + y)$
   - d. $a(2a + 4)$

3. Use the four principles of addition, multiplication, division, and subtraction to solve the following:
   a. $1/5\ x = 11$
   b. $n + 2.79 = 17.5$
   c. $28 = x - 27$
   d. $x - 17 = 58$
   e. $90x = 180$
   f. $10 + d = 60$
   g. $1/4d = 50$

D. Powers and square roots
   1. Methods for finding square root.
      a. Table
      b. Slide rule
      c. Formula
   2. Powers or exponent
      a. 4^2 means 4 X 4
      b. 4^6 means 4 X 4 X 4 X 4 X 4 X 4
      c. $(3^2)^2$ means (3 X 3) X (3 X 3)
   3. Find:
      a. $(2^2)^2$
      b. $(2^2)^4$
      c. $(34)^2$
      d. $(46^2)^3$
      e. $(15^2)^1$
   4. When two like factors with powers are to be multiplied, first find the sum of the powers and then raise the factor to the indicated power: $A^2 . A^3 = AA . AAA = A^5$
      Express in simplified form:
      a. $4^2 . 4^3$
      b. $2^5 . 2^2$
      c. AA. AAAAA
      d. $A^5 . A^3$
      e. $3^3 . 3^4$
   5. Find the square:
      a. 8^2
      b. 10^2
      c. 15^2
      d. 16^2
      e. 100^2
   6. Find the square root:
      a. $\sqrt{25}$
      b. $\sqrt{400}$
      c. $\sqrt{81}$
      d. $\sqrt{900}$
      e. $\sqrt{9}$
   7. Find the square root of 1296. Use the following steps.
      a. First separate the number 1296 into pairs of 2 digits each. There are two, so there will be a 2-place number as the square root.
      b. Find the largest square in the first pair to the left. This is 9. Write 3, the square root of 9, in the quotient over the first period. Write the square of 3, or 9, under 12.
      c. Subtract 9 from 12, and bring down the next pair, 96.

d. Begin the new division by doubling the 3 (3 X 2)= 6.
e. Divide 396 by 60. Write the 6 as the second number in the quotient, and add it behind the 6 to form the divisor 66.
f. Multiply 66 by the 6 in the quotient (66 X 6 = 396). Since there is no remainder, the problem is complete. The square root of 1,296 is 36.
Example:

```
        3    6
 3² |12 ' 96
     9
 66 |396
     396
```

8. Find the square root of:
   a. $\sqrt{784}$
   b. $\sqrt{5329}$
   c. $\sqrt{556,515}$
   d. $\sqrt{19,600}$
   e. $\sqrt{3136}$
9. Use the slide rule to multiply the following:
   a. 20 X 35 = n
   b. .56 X .27 = n
   c. 272 X 3 = n
10. Use the slide rule to divide the following:
   a. 36 ÷ 6 = n
   b. 3.25 ÷ .25 = n
   c. .72 ÷ .12 = n
11. Use the slide rule to find:
   a. 200^2
   b. 35^2
   c. 6^4

CAUTION: These are representative problems of what the teacher can do.

VI. Informal Geometry:

This We Can Do:

A. Basic construction
  1. Recognition and identification of planes and solids.
    a. Draw the following with compass and protractor:
      (1) 4" square
      (2) An equilateral triangle
      (3) A rectangle 4" X 2".
      (4) A trapezoid with bases of 7" and 4" and altitude of 8".
      (5) A parallelogram 3" X 1".
      (6) A 3" circle
  2. Name the solids having flat surfaces or faces.
  3. Name the solids having curved surfaces.
  4. Know the meaning of geometric terms.

B. Descriptive properties of most plane and solid figures.
  1. Which has more floor surface, a room 24' X 16' or one 16 yds. X 7 1/3 yds.? How much larger?
  2. A nylon rug is advertised for $156.00, size 12' X 18'. How much is that per sq. yd.?
  3. A field is in the shape of a parallelogram and is 80 rd. X 40 rd. How many acres in the field?
  4. If the base of a triangle is doubled and its altitude remains the same, the area will ______________.
  5. Find the area of the following trapezoid:
    upper base 7 ft.
    lower base 12 ft.
    altitude 8 ft.
  6. When a boy mowed a lawn a strip 10 ft. wide about a lawn 70 ft. X 185 ft., what per cent of the lawn was mowed?
  7. A circle is 209 inches in circumference. What is the diameter?
  8. Using Pi as $\frac{22}{7}$, find circumference of the following:
    (a) r= 20 in.
    (b) d= 28 ft.
  9. Using Pi as 3.14, find circumference of each:
    (a) r= 30 yd.
    (b) d= 4.5 mi.
  10. How many vertexes does a cube have?
  11. A 5 inch cube is cut from a 10 inch cube. What per cent of the large cube remains?
  12. How many gallons in a tank 4' X 3' X 6'?
  13. A driveway is 180' long and 4 yds. wide. What is the cost of paving it at $2.85 a square yd.?
  14. Mother made napkins 12" square. She had one square yd. of material for which she paid $3.60. What was the cost of each napkin?

C. Lines and Angles
  1. Constructing a line segment equal to a given line segment.
  2. Constructing an angle equal to a given angle
  3. Bisecting an angle.
  4. Constructing the perpendicular bisector of a line segment.

5. Constructing a line perpendicular to a given line from an outside point.
6. Constructing a line perpendicular to a given line at a point on the line.
7. Constructing a triangle using given line segments as sides.
8. Constructing a triangle given two angles and the included side.
9. Constructing a triangle given two sides and the included angle.
10. Construct a pentagon by inscribing in a circle.
11. If you had walked two blocks south, turned left and walked one east and turned south and walked three blocks, on what kind of line would you have walked?
12. Draw a clock face and illustrate:
    (a) straight angle
    (b) acute angle
    (c) right angle
    (d) obtuse angle
13. What is the supplement of an angle of 142°?
14. What is the complement of an angle of 38°?
15. Draw a circle with a radius of 5 inches. Divide it into 4 equal parts. Write 1 and 2 into supplementary angles. Write 3 and 4 into complementary angles.
16. Draw a circle with a radius of 2½ inches. On it draw the diameter, a radius, a chord, a central angle of 40°, and an arc of 22°.

D. Congruence and symmetry

1. Articles exactly alike in size and form are said to be congruent and coincide. Such figures are also equivalent. Name several objects that are congruent and that coincide.
2. If 2 baskets each hold one peck, are they equivalent? necessarily congruent?
3. Two pieces of cheese each weigh 2 lbs. Does this mean they are congruent?
4. Angles may be constructed within circles to form geometric designs. We think of a geometric design as one in which one side is congruent with the other. Create one. Use a large circle.
5. When one side of a figure is balanced with the other side so that one side fits on the other side we call this line symmetry. The line of folding is called the axis of symmetry.
6. Draw an isoceles triangle. What line is the axis of symmetry?
7. Draw an equilateral triangle. How many axes of symmetry does it have?
8. Draw a square. How many axes of symmetry will it have?
9. As you drew the axis of symmetry in the equilateral triangle and the square, you found a point that bisected all lines through it that ended at the sides of the figures. This is called point symmetry.
10. Do these figures have point symmetry?
    a. a rectangle
    b. a circle
    c. an elm leaf
    d. a snowflake
    e. an octagon

CAUTION: These are representative problems of what the teacher can do.

VII. General Enrichment

1. Section of books for the school library in accord with an allocated sum. Computing discount and shipping charges
2. Using the adding machine.
3. Introduction of the slide rule
4. Comparing measures of other lands and other times with present American measures, (money, land, weights)
5. Converting family-sized recipe to feed a larger group; figuring the cost and amount of food for a party of P.T.A. supper
6. Determining amount of cloth needed to make a specific article
7. Duplicating the goings of money--set up business, buy, build, make, advertise, sell, manage a budget
8. Developing class and individual records with averages, per cents and medians
9. Interesting them in math problems which involve research to get data necessary for solution
10. Suggest situations where estimating can be used out of school. For example:
    a. How much is half the size of this box of cake mix?
    b. How can I copy this sketch twice the size free hand?
    c. How much string do I need to do up this package?
11. Make a study of accuracy of measurement as used in adult life. For example:
    a. How accurately does the butcher measure?
    b. How accurate is the carpenter when figuring the cost of shingling?
    c. How accurate is the cabinet maker when making a corner cupboard?
    d. How accurate are the measurements of the druggist when filling a prescription?
    e. What is the allowance for probable error in space probe instrumentation?
        (1) Precision is vital. 90% may not always be enough when life is dependent upon it.
    f. Discovering how mathematics developed--The Story of Early Measurement.
        (1) From their research gifted pupils may create a story, at adolescent level of understanding, about man's development of indirect measurements. Those with artistic talent may translate certain features into pictures which can be set up in a series of colored slides. Another gifted child prepares the script and narrates the story as the slides are flashed on the screen.
    g. Make a study of jobs which use indirect measurements. Bring in and demonstrate some of the instruments and devices used on such jobs. Outline the basic mathematical principles behind the instrument and work out basic problems with the rest of the class. Show the Precision of These Measurements.
    h. Estimating measurements, studying the yardstick, tapeline, and steel tape
        (1) What reasons would explain why a carpenter uses a tapeline rather than a ruler or yardstick in measuring the length of a lot, a home or a room?

(2) Have pupils measure the length of the classroom to the nearest inch from three different points at the same time; some using a ruler, some a yard stick and others using a tapeline. Note which ones finish first. Compare results. Account for any difference in results.

12. Reporting on money of other lands
13. Studying history of American money
14. Reporting on jewelers weights
15. Collecting data on volume of milk, water and other liquids used by children
16. Planning class trips in terms of distance and time
17. Reporting on common measurements used with respect to food
18. Comparing land, water and air speeds in transportation
19. Analyzing the school building in terms of area used by different groups.
20. Making individual and class budgets
21. Making budgets for activities such as the school paper
22. Develop class and individual records of height and weight
23. Measure rainfall and snowfall.
24. Make a class or project time schedule.
25. Estimate distances in the neighborhood.
26. Studying of metric system: Illustration: a. Lighting for an evening's reading; b. Correct time for three weeks; c. Two hours of ironing
27. History of numbers including the introduction of and the importance of the zero, standardization of measurement, biographies of famous mathematicians, internationalization of time, the derivation of our calendar, the evolution of taxation, etc.
28. Measuring a known object to help visualize the length of an unseen object whose length is known.
29. Find out how the weatherman uses the barometer.
30. Investigate how people use decimal fractions in industry.
31. Use references to find the history of decimal fractions.
32. Use actual problem situations arising in home or school and require children to plan ways of solving them.
33. Give special vocabulary exercises in which children explain or illustrate meanings of arithmetical terms.
34. Investigate and learn to use the Binary Number system.
35. Use number tricks and puzzles to challenge thinking and to increase interest. Children should have opportunity to see that arithmetic can be fun.
36. Collect illustrations or ads from papers and magazines for bulletin board using a different mathematical concept each time.
37. Construct circles and divide into fractional parts to show the part spent for sleeping, eating, playing, studying, etc.
38. Display and discuss maps showing rainfall in U. S. and other countries.
39. Compare time needed to cross continent, oceans, or circle globe today with that needed in past.
40. Read and explain railroad, bus and air time table. Plan imaginary trips.

41. Do research to discover meaning of "time" words or abbreviations used in math such as A.D., B.C., century, calendar, decade, score, etc.
42. Study city budget.
43. Cost of operation of schools for one day.
44. Making and solving math puzzles. Some are:
    a. Crossword puzzle type
    b. Constructing magic squares
    c. Tom wrote 3 figures and multiplied them by 4. His answer was 10. What number did he write first?
    d. Can you arrange eight 4's so that the sum is equal to 500. (44) Place the other three.
       (444)
    e. Explain the difference between one-half a square yard and a half-yard square.
    f. Riddles such as: ¾ of Jane + ½ of us + ½ of an + 2/3 of rye = January.
45. My father Has a Grocery Store. The child who is It begins with a simple problem such as "My father has a grocery store and sells 6 cans of evaporated milk at 2 for a quarter." He calls on another child to give the answer. If he gives the correct response, he becomes It. Problems can feature any item sold in a grocery or supermarket. For example, he sells a half dozen oranges at 59 cents a dozen; he sells 2½ pounds of asparagus at 27 cents a pound, and so on.
46. Adding the Numbers
    This game tests children's abilities to visualize larger numbers as well as to add. If playing with four-digit numbers, for example, the child who is It might say 1047. The first perspn adding the separate digits correctly (the answer would be 12) becomes It.
47. Heavy, Heavy- What Hangs Over?
    The old game, "Heavy, heavy, what hangs over?", can be played with an arithmetic twist. When the child is taken into captivity and asks "Heavy, heavy, what hangs over?" he is given an arithmetic combination, say for example 9 X 5. The captive answers 45 and asks, "What must I do to redeem it?" He is given a second order, "Add 7." If he gives the correct response, which in this case would be 52, he does not need to pay a forfeit.
48. Baseball averages
    Capitalize on the interest of your baseball-minded boys during the spring and fall to teach percentages. After each game, encourage these children to compute the batting averages as reported weekly in the Sunday sport section. This will give the student the opportunity to check his accuracy.
49. Make charts showing increase in postal rates and increase in quantities of mail handled, increase in number of employees, cost of this service, etc.
50. Make charts showing height, weight, and ages of children in a class.
51. Demonstrate with models the use of knots in string or rope as a means of representing numbers.

VIII. General terms and vocabulary

1. assessed valuation
2. axis of symmetry
3. beneficiary
4. binary
5. bisector
6. bond
7. broker
8. brokerage
9. centimeter
10. central angle
11. chord
12. coincide
13. complementary angle
14. compound interest
15. cone
16. congruent
17. corporation
18. co-signer
19. cubic centimeters
20. cylinder
21. decimeter
22. discount
23. duty (custom)
24. equation
25. equilateral
26. face of note
27. face of policy
28. hectometer
29. hexagon
30. horizontal scale (graph)
31. hypotenuse
32. inscribed polygon
33. installment buying
34. interest formulas
35. isosceles
36. kilogram
37. kilometer
38. lien
39. liability insurance
40. liter
41. maturity
42. margin
43. measurement,direct and indirect
44. megameter
45. meter
46. millimeter
47. mortgage
48. negative numbers
49. net proceed
50. per value of stock
51. per cent of change
52. pentagon
53. pictogram
54. pictograph
55. plane figure
56. polygon
57. positive number
58. premium (insurance)
59. prime meridian
60. prism
61. promissory note
62. property tax
63. pyramid
64. quadrilateral
65. redemption of a bond
66. regular polygon
67. rhombus
68. scalene
69. service charge
70. signed members
71. signer
72. square root
73. stock exchange
74. successive discounts
75. supplementary angles
76. symmetry
77. time note
78. trapezoid
79. travel check
80. triangle prism
81. vertex
82. vertical scale (graph)
83. wholesale prices

This We Believe....

There is a great demand for more people who are trained in all branches of science. This demand for scientists grows from the tremendous technological advances of recent years. World leadership is becoming as much a question of scientific ability as of statesmanship, favorable geographical position, or historical advantage.

If America hopes to maintain her present position among world powers and continue to raise the standard of living for an increasing population, we must step up our production of scientists. Right now the United States faces a critical shortage of competent people in this field.

This problem must be solved, and the nation's schools have a major role to play in solving the problem. We must develop our greatest of all resources -- the potentialities of our "gifted children."

This We Need....

1. Enthusiasm for science and for the child's interest in science.
2. A scientific way of thinking.
3. A program of learning by doing.
4. Worth-while help for youngsters with special abilities that go far beyond the normal class activities.
5. Science references such as: Popular Science Encyclopedia, Grolier Society 10 volumes; World Book or other encyclopedias, and science magazines.
6. Film and filmstrips in all areas of science.
7. Charts, pictures and science pamphlets.
8. Science books, science equipment and laboratories, materials and realia that will enrich learning experiencies.

PLATE I

PROBLEM STUDY AREAS - SCIENCE ENRICHMENT FOR SEVENTH GRADE

PROBLEM AREA No. 1. ANIMALS

Fill a large square or rectangle acquarium with good soil. Dig into an ant hill a deposit colony in the acquarium. Keep notes on observations....Members of the class write to health department or dairy council for white rats. Prior to receiving rats the class should have studied the effect of diet on animals. Publish assignments for feeding and cleaning. Each student will keep his own records but one official log will be established and assigned to members of the class for a week at a time. Diets are to be worked out by the students. Weight taking, log keeping and observation periods must be on a daily basis.

PROBLEM AREA No. 4. MAGNETS

Observation and experiment is used when students balance a bar magnet on a pencil. Lower a bar magnet with the North pole down. What happens when an N pole is brought close to another N pole? ... Bring the poles of the bar magnet toward the ends of a compass needle. Since we can identify the North and South poles of the compass what can we say about attraction and repulsion?

PROBLEM AREA No. 2. PLANTS

Taylor's Gardening Encyclopedia will give the exact quantity of elements to each quart of water. Order elements far enough in advance to assure their arrival at the time required. Have class check World Book and other encyclopedia for drawings and plans for soilless farming. Begin project outlined for Problem Area No. 2 on page 1.

PROBLEM AREA No. 3. WEATHER

Arrange to have a representative from the nearest Weather Bureau office to speak to the class.... Collect weather sayings and determine whether they are based on superstitions or facts.... With advice from the guest speaker build a weather station; read and interpret instruments. In this connection, order weather maps from the Supt. of Documents, Washington 25, D. C. Use the maps and class readings to forecast weather. (See Table II)

PROBLEM AREA No. 5. OUR EARTH IN THE UNIVERSE

Students will set up a prehistoric museum: make models and illustrations. Find out about glaciers and their effect on different places in the U. S. Make a time chart showing one billion years of Earth's age in scale and indicate what happened at different intervals.... Collect and classify fossils. Study planets; choose one for special study and observation.. Make a star finder and plot the position of several stars for one month... Find out how astronomers determine distance to moon, sun and other stars... Calculate how long it would take supersonic planes and rockets of today to reach the various places in our universe, using current speed records.

PLATE II

PROBLEM AREA No. 6. ELECTRICITY

The able child realizes the importance of the control and use of various forms of energy and often displays particular interest in new forms of energy, such as atomic energy... Make a collection of toys which demonstrate scientific principles; label and display. Keep a scrapbook of news items concerning peaceful uses of the atom... Find out about the production and use of commercial and industrial magnets (RECALL PAST LEARNING IN PROBLEM AREA No. 4)... Build a modern home and wire it. Have a local electricial check the wiring.

PROBLEM AREA No. 7. ROCKS, MINERALS AND SOIL

Construct a map of resources in the United States. Illustrate to show how the minerals in any geographical location affect the local economy... How is the local economy affected by resources in the area? ... Determine the geological factors that were responsible for the formation of deserts and mountains.

... Following classroom study of the classification of rocks, arrange a field trip to an area where the children will be able to find rocks. Allow each student to work on classifying his collection.

PROBLEM AREA No. 8. CONSERVATION

Field Trips to include: (1) A game warden's headquarters, (2) to a forest lookout tower and meet a forest ranger, and (3) a trip to a state or federal fish hatchery.

Outside activity-Find some area around the school, part of the school grounds, that shows the effects of a lack of care. Get permission for the class to take on the area as a conservation project. Plan through discussion and reading research. Eventually have students submit sketches showing what improvements the project will make. A few seedlings, some shrubs and grass transplants will teach a graphic lesson of what care of the land will do.

Classroom activity - The effect of grass cover and dams may be illustrated in the classroom when land is not available. Two demonstration tables should be constructed and laid side by side. Both tables (with edges all the way around) are to be filled with good soil. The first table will have a sign that shall read, "Field A-NO GRASS OR DAMS." The second will read "FIELD B-WITH GRASS AND DAMS." Run off pipes will come out of the lower front edge of each table and will have buckets under them. Charts for each field must be kept up to date. They must show amount of water poured on by date, the amount of water that has run off, and the amount of soil that washes off. Soon the class will begin to see the results. As the grass grows we will find that field B gives up less water and less soil is washed away. Field A will begin to show signs of erosion. Later gully control can be tried on field A. The class will see that shrubs will begin to stop erosion. But they will also see that even though it stops the loss of soil it does not repair the damage. At this point we can teach a great lesson as it is pointed out that unless man removes good soil from another area it will take nature hundreds of years to replace the topsoil it took the class just a few weeks to wash away.

PROBLEM AREA No. 9. HEAT, LIGHT AND SOUND

Following a program of directed reading the students will be required to classify the following examples of energy: (1) a moving car, (2) the solar system, (3) hot water, (4) sugar, (5) atomic reactions, and (6) a glacier.

This we can do...

PROBLEM AREA No. 1.
ANIMALS

I. Controlling insects

II. Reproduction

III. Diet

PROBLEM AREA No. 2.
PLANTS

I. Science in farming
   A. Seeds in sponges
   B. Seeds in gravel
   C. Seeds in moss basket
   D. Seeds in cotton
   E. Seeds in sawdust

II. Malthus' Theory
   A. What he said
   B. His theory has not worked out
      1. Better methods
      2. Better fertilizer
      3. Due to 1 and 2 we now get larger yields from smaller space.
   C. Could the theory still prove to be correct?

PROBLEM AREA No. 3.
WEATHER

I. The Weather Bureau

II. Affect of climate
   A. On living things
   B. On non-living things

III. The movement of air masses

PROBLEM AREA No. 4
MAGNETS

I. What is a magnet?
   A. Natura l
   B. Electromagnets (Teacher will explain the fundamentals and illustrate with a prepared drawing)
      1. Discussion of electromagnets. Teacher to strive for a real understanding of the subject.
      2. Class divided into teams who will work to make an electromagnet.
      3. Reward team making best magnet by allowing them to put on a science demonstration for a lower grade or grades.

PROBLEM AREA No. 5.
OUR EARTH IN THE UNIVERSE

I. The Earth through a billion years of movement (Theory)

II. The solar system

III. The constellations

PROBLEM AREA No. 6.
ELECTRICITY, ENERGY, FORCE, CHANGE, AND POWER

I. Sources of energy

II. Light, ultra-violet, and X-ray

III. Electrical uses

IV. Atomic power
  A. Manhattan Project
  B. Cyclotron
  C. Potential for peace
  D. Potential for destruction

PROBLEM AREA No. 7.
ROCKS, MINERALS AND SOILS

I. How rocks are formed
  A. Heat produced
  B. Sedimentary
  C. Heat changed

II. Composition and uses of minerals, metals and alloys

III. The story of the importance of soils.

PROBLEM AREA No. 8.
CONSERVATION

NOTE: This Problem Area will be most successful if trips are arranged to such places as (1) a game warden's headquarters, (2) a forest lookout tower and a meeting with a forest ranger, and (3) a trip to a state or federal fish hatchery.

I. Use of our natural resources

II. Use of our human resources

III. Conservation of life through control of disease

PROBLEM AREA No. 9.

HEAT
LIGHT
SOUND

I. Heat
  A. Define
  B. Energy (Kinetic theory)
  C. Utilization

II. Light
  A. Newton's theory
  B. Huygens' theory of light waves
  C. Speed (Light year system of measurement)

III. Sound
  A. Speed
  B. Frequency
  C. Producing methods
  D. Uses

This we can expect....

That, having followed our program throughout the entire school career of the student, we will see a development of leadership abilities, social competence and skill in human relationships as well as in technical fields sufficiently great to meet the international challenge of the modern world.

TABLE I

TABLE OF ENRICHMENT ACTIVITIES
FOR
SEVENTH GRADE

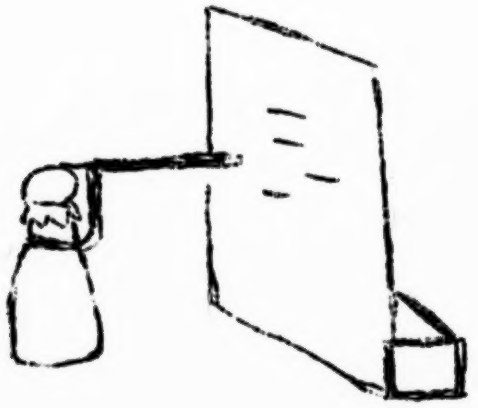
ACTIVITY	REMARKS
Supervised reading	Even in the rural schools this form of enrichment is open to all teachers. It involves helping the child to obtain reading material in the field of science. MORE IMPORTANT - The teacher must strive to teach the child to locate his own material.
Visual aids	In the field of science a great many films and film strips are available. These can be used to a great advantage for the gifted child. He can be given the opportunity to assist in the presentation and should be encouraged to find out which film or film strip is the most suitable for understanding the topic studied.
Field trips	Many things can be accomplished by this type of activity. The trips can be unlimited in that they may reach into all aspects of a community.
Individual Projects	These can give the gifted child an opportunity to work on problems according to his own needs and interests. This activity gives the student a period of time in which to formulate and solve his own problems.
Laboratory Experiments	No school need to miss this vital training now that the rolling Lab. has been made available. Learning by doing always proves profitable. Gifted children should be stimulated and encouraged to work on their own experiments in laboratories.
Making collections	Gifted children, in the field of science, should be encouraged to make collections. These may include things in which they are particularly interested. In addition to collecting, encourage them to do much research concerning the collections. DON'T JUST COLLECT--CLASSIFY
Other enrichment programs	1. Make use of community resources (Refer to Table I, Social Studies Section) 2. Science clubs. 3. Award programs for science students. 4. Summer programs for the gifted students.

TABLE II

CHART FOR PREDICTING THE WEATHER AND DIRECTIONS FOR MAKING A BAROMETER

	TEMPERATURE	BAROMETER READING	CLOUDY OR CLEAR	DIRECTION OF WIND	PREDICTION FOR NEXT DAY	WEATHER NEXT DAY
1st day						
2nd day						
3rd day						
4th day						
5th day						
6th day						
7th day						

Get a milk bottle. Cut piece out of a rubber balloon large enough to cover top of the bottle. Use rubber bands to hold the piece of rubber tightly over the top of the bottle. Put a dab of good glue on the rubber-place the dab right in the center. Fasten a drinking straw to the rubber top by placing one end of the straw in the glue. Place weight on straw to hold it until glue dries. The end of the straw away from the bottle will move up or down as the pressure of the air changes. Place a card in a fixed position to show how much the end of the straw moves.



THIS WE BELIEVE....

In all phases of fine arts, it is very important that adult standards and ideas are not imposed on children. Fine arts must be creative and spontaneous in that children are permitted to express their own feelings through such media as art, music, dramatics, and dancing. It is important that we keep in mind that the development of understanding and appreciation for fine arts among our talented children leads to creativity and individuality as expressed through these forms of activities that may result not only in complete fulfillment for them, but also to contributions of rare beauty to the world.

FINE ARTS - SEVENTH GRADE

Problem Area I

I. Art
  - A. Appreciation
  - B. Expression
  - C. Interpretation

Problem Area II

II. Music
  - A. Appreciation
  - B. Creation
  - C. Cultural
  - D. Theoretical

Problem Area III

III. Dramatics
  - A. Appreciation
  - B. Creativity
  - C. Dramatic activities

Problem Area IV

IV. Dancing
  - A. Origin of dances
  - B. Kinds of dancing
  - C. Values of dancing

Problem Area I

ART

This We Need....

1. Paper-drawing, finger paint, construction, etc.
2. Paints-Oils, tempera, pastels, charcoal, water colors, starch paint.
3. Brushes-assorted sizes.
4. Easels
5. Clay, soap, wood products.
6. Wire, net, roping.
7. Raffia
8. Materials for weaving, crocheting, etc.
9. Books on history of art.
10. Reproductions of famous paintings.
11. Biographies of artists.
12. Magazines, such as Art Activities and School Art.
13. Materials for paper mache--paste, paper towels, and newspapers.
14. Other books such as:

    a. Discovering Design - Marion Downes
    b. A Child's History of Art - Hillyer and Huey
    c. Children's Art Book - G. C. Holme
    d. Art Through the Ages - Helen Gardner

This We Can Do....

I. Art

- A. Appreciation
  - 1. Displays-Selecting and displaying reproductions and originals of representative art
    - a. Painting
      - 1. Illustrated stories
      - 2. Abstractions-string drawings, scribble drawings, etc.
      - 3. Murals
      - 4. Dioramas
      - 5. Models
      - 6. Paintings from listening to music
    - b. Sculpture
    - c. Weaving
    - d. Pottery
    - e. Photographs
    - f. Needlework, knitting, embroidery, etc.
  - 2. History
    - a. Reading history of paintings, sculpture, architecture, and other media of fine art
    - b. Studying biographies of contributors to the field of art
    - c. Studying art media used in other cultures
    - d. Exploring the history of the development of the design of a present day phenomenon such as a spoon, a house, a church, an automobile, a jet airplane, etc.
  - 3. Cataloguing art objects found in the home such as china, silver, furniture, paintings, and others
  - 4. Investigating local and state amateurs contributing to arts and crafts
  - 5. Clipping and collecting from magazine advertisements, etc. showing good design in furniture, homes, clothing, cars, and tools

6. Making portfolios of good paintings, sculpture, architecture, and photography

7. Collecting and arranging materials of different texture, color, and form. This is a good means of becoming more sensitive to visual and tactile experiences.

B. Expression

1. Sculpture - Make models or reproductions from the following:
    - a. Soap
    - b. Snow
    - c. Clay
    - d. Wood - This may be used for the following:
        - (1) Model airplanes, houses, furniture
        - (2) Totem poles
        - (3) Jigsaws
        - (4) Geometric designs
2. Painting and drawing using such media as the following:
    - a. Water colors
    - b. Oils
    - c. Tempera
    - d. Pastels
    - e. Charcoal
    - f. Starch painting with water colors
    - g. Finger painting
    - h. Pencil drawings
3. Weaving
    - a. Basket making
    - b. Working with raffia
    - c. Using looms
    - d. Swedish weaving
4. Photography
    - a. Learning to use form, dark and light areas, texture in planning
    - b. Learning to crop and mat photographs
    - c. Taking photographs of the community or city (These may be used for slide tours of the city, community, or interesting places; or they could be an illustrated tour map.)

5. Designing

    a. Design costumes for a play

    b. Design dolls and puppets

    c. Design costumes for historical figures

    d. Design modern dress

6. Printing

    a. Linoleum block printing

    b. Illuminating printing

    c. Old English and other designs

7. Silhouettes

    a. Historical figures

    b. Famous authors

    c. Well known composers, etc.

8. Interior decorating

    a. Plan to redecorate the school or some other community building

    b. Plan to redecorate his own or some other child's room

    c. Show how you would paln an ideal room, house, or school

9. Stained glass windows

    a. Church window designs

    b. Kaleidoscopes

C. Interpretation

1. Interpret some historical event through the drawing of comic strips

2. Interpret music or poetry with a picture

3. Make masks to use in illustrating music and drama

4. Plan decorations for a holiday

5. Do outdoor sketching of scenes, interesting places, or unusual things

6. Invent art games such as the following:
    a. Select paintings or pictures for jigsaw puzzles
    b. Make guessing games about the lives or the works of artists
    c. Make guessing games about countries from which certain artists came
7. Arrange furniture, supplies, bulletin boards, etc., for improvement of the classroom
8. Explore the nature of colors
    a. Prisms
    b. The mixing of colors
    c. The psychological effect of color
    d. Color television
    e. The philosophy of color
9. Use of color in the dyeing of cloth, commercially and experimentally in the classroom
10. Exploring the language of color
    a. For nations and major religions
    b. For certain secret organizations
    c. For ceremonial practices
    d. Derivations of expressions concerning color such as:
        (1) Red badge of courage
        (2) Royal purple
        (3) True blue
        (4) Black as midnight
        (5) Black as the ace of spades
        (6) White as snow
11. Design
    a. Geometric - Draw designs that could be carried out in block print, stencils, etc.

b. Construct three dimensional designs made from paper, wire, string, wood, toothpicks, cloth, etc.

c. Design to music with finger paint, chalk, or paint

d. Design with weaving material

12. Participation in art contests

a. Local art fairs

b. State art contests

c. National contests

D. Set up children's art clubs

1. School clubs

2. Community clubs (Permit talented children to visit an art studio to see an artist in action. The academically talented might even serve as an apprentice.

Problem Area II

MUSIC

This We Need...

1. Music book collections other than the basal texts.
2. Records - classical, folk, popular and records of famous operas.
3. Musical insturments, (brasses, strings, wind, percussion, etc.)
4. Materials for constructing simple musical instruments e.g. instruments for toy symphony.
5. Pictures of famous orchestras.
6. Biographies and autobiographies of famous musicians and composers.
7. Books, such as:

   a. *How Man Made Music* - Fannie Buchanan.
   b. *Stories of Great Operas*, Ernest Newman.
   c. *The Story Behind Musical Instruments* - Elizabeth Montgomery.
   d. *Introduction to Opera* - Mary E. Peltz
   Other books that will enrich appreciation of music

MUSIC

1. Appreciation

   A. Listening - Many listening experiences of able children will be similar to those of all children, but the able child will acquire a deeper meaning because of his mature emotional response. Good listening activities for appreciation could include the following:

      1. Listen to a pipe organ in a local church.

      2. Listen to recordings of different interpretations of the same music; critically compare them.

      3. Listen to the music of great composers to determine what it expresses.

      4. Give a constructive criticism of a performance by the Nobth Carolina Little Symphony Orchestra.

      5. Attend, if possible, an opera. Critically evaluate portrayal of roles.

      6. Make a comparison of modern music with the classics.

   B. Reading - Provides children with food for thought and excellent material for research.

      1. Read stories of operas.

      2. Read the history and construction of instruments.

      3. Read and study the lives of composers and report to class.

      4. Study the origin and historical significance of folk songs and patriotic songs.

      5. Gather data on experiments conducted by various industrial plants on effects of music on production.

      6. Visit a music conservatory for research data.

II. Creation - Creativity in music gives expression to self, particularly to the emotional self which we often do not understand.

   A. Singing

      1. Sing descants (pitched high for girls, low for boys) while the class sings melodies of songs.

      2. Sing in a school choir or ensemble; a church choir, or out-of school group.

3. Assist in mastery of song materials, for example, carry the harmony of a song.

4. Sing as a soloist for a special occasion or school program.

5. Lead group singing.

6. Participate in various all-city choral festivals.

7. Participate in musical achievement programs.

B. Playing insturments

Study of an instrument or instruments contributes much to the able child's musical growth; it gives him a good foundation for acquiring musical success. Usually, it affords him a feeling of great personal satisfaction and often brings him recognition from his age group.

1. Play instruments for student singing

   a. Piano

   b. Drum, tom-tom, castanets

   c. Zither, guitar

   d. Bells, xylophone

   e. Auto harp or any other instrument that children may know

2. Learn to follow and play an orchestral score

3. Make instruments for a toy symphony

C. Composing

1. Set poems to music

2. Write vocal descants for song

3. Write instrumental descants to accompany class singing

4. Originate rhythms related to class study

5. Take the lead in solving tonal and rhythmic problems

6. Transpose music for accompaniment on auto harp, for clarinet and trumpet parts, or any similar transposition

7. Make a dictionary of music terms and symbols

8. Experiment with melody instruments and tone blocks to create original melodies and harmonies; experiment with rhythm instruments for rhythm effects and patterns

9. Compose an original song for a special occasion

10. Submit an original composition to North Carolina Symphony Orchestra for consideration in their annual contest

11. Assist or assume leadership in developing an original cantata or operetta

12. Add new, original verses to a song

III. Cultural

A. Musical research

1. Learn about Chinese and other Oriental music and instruments

2. Trace historical background of folk songs which developed from similar types of environment or experiences

3. Do research and report on development of music from primitive to present day-vocal and instrumental

4. Locate music and art forms of various countries as the country is studied and compare with cultural forms of the United States including the rhythm, mood, color, etc.

5. Trace contributions of other countries to American music and compare the types of influences.

6. Explore vocational and avocational possibilities for modern musicians, composers, writers, etc.

7. Develop a clear and accurate view of music as it functions in the lives of our people and of other peoples.

8. Correlate music with other subjects, such as social studies.

9. Build bulletin boards with a musical theme for correlation.

IV. Theoretical

A. Science
1. How tone is produced
a. Vibrations

b. Striking-Piano-drum

c. Blowing-horn

d. Bowing-violin

2. How tone is raised-lowered

3. Experiments

a. Working out scales with glasses filled to various levels.
b. Experimenting with length and thickness of materials and pitch.

B. Use of tuning forks
    1. Tuning up motors
        a. Cars and motorcycles
        b. In mills and factories
    2. Testing strength of bridges and tall buildings
    3. Tuning of pianos and other stringed instruments, etc.

C. Music Theory
    1. Time, measure, etc.
    2. Music reading

Problem Area III

DRAMATICS

This We Need...

1. Records of famous actors reading parts of outstanding plays.
2. Books about makeup, stage setting, and costuming
3. Biographies and autobiographies of famous actors, actresses, and playwrights.
4. Books about the history of the theater.
5. Records of the music and speech of plays such as "The King and I."

This We Can Do...

I. Dramatics

A. Appreciation--Joy in dramatic expression is universal, and in order to appreciate its possibilities it is necessary to know something of the changes through which drama has passed.

1. History of drama
    - a. Drama of primitive people (Dealt with religious ceremonials)
    - b. Drama of the ancient Greeks (During this period theaters began to appear, and they were the first to encourage open-air performances.)
    - c. Drama at Rome (These were the originators of athletic performances, choruses and circus performances)
    - d. Medieval drama (Began in simple dramatic incidents that were introduced into church services for special days. These included such performances as the Child in the Manger, The Adoration of the Magi, and special performances celebrating the Easter festivities
    - e. The rise of national drama (These originated in Spain, England, France, Italy, and Germany. English drama reached its climax in the works of Shakespeare.
    - f. Present status of drama (Include a study of the present day drama such as the Broadway Plays, Little Theater Groups, The Outdoor Dramas, etc.)

2. Reading
    - a. Stories and books on period costumes
    - b. Biographies of great play-writers, actors, and actresses
    - c. Contributions of the great artists, such as the plays of William Shakespeare

B. Creativity--Creative dramatics is the act of feeling, thinking, sharing, and being in any activity. It is aimed toward the development of the whole child, socially, emotionally, intellectually, physically, and spiritually.

1. Methods for introducing creative dramatics
    - a. Set the stage for acting or dramatization. For example, you might start with a discussion of home life in communities and cities during the Civil War. Ask the students to put themselves in the role of the people and have them dramatize family life. One group could portray the lives of the wealthy plantation owners while another could depict that of the tenants or working class of people.
    - b. Include students in planning. Give them an opportunity to use their own imaginations and creativity
    - c. Stimulate children's curiosity. (Approach from their own interest level)
    - d. Build creativeness through the children's imagination from familiar life situations and classics of children's literature
    - e. Organize groups such as dramatic clubs and little theater groups

    f. Use the story drama technique. In English, dramatize scenes from novels and short stories

2. Methods for introducing creative dramatics (Writing)

    a. Encourage the writing of short original plays for class presentation
    b. Write a skit for a radio program
    c. Prepare a script for a television program
    d. Write plays for younger children
    e. Write plays for special holidays

C. Dramatic Activities
    1. Direct dramatic productions
    2. Write, produce and direct an original play or program
    3. Participate in community theater groups, school operettas, and plays
    4. Give dramatic readings for assemblies or parent programs
    5. Arrange and participate in pantomime programs
    6. Plan programs for benefits (hospitals, churches, community projects, or shut-ins)
    7. Learn the techniques of socio-drama
    8. Attend local theater performances
    9. Attend the outdoor dramas such as "Unto These Hills", "The Lost Colony", "Horn in the West", "Common Glory" and others

Problem Area IV

DANCING

This We Need...

1. Phonograph and appropriate records.
2. Dance Handbook, 1959 Edition, Dr. Margery L. Turner Published by Prentice Hall, Inc., Englewood Cliffs, New Jersey.
3. Books about the interpretation of dances.
4. Books about the history of dancing in various countries.

This We Can Do...

I. Dancing - Dancing has been an integral part of practically every culture from ancient times to the present. Peoples from all tribes and cultures have, from their beginnings, expressed themselves in some forms of dance. Thus, it is a natural assumption that it is an emotional outlet that has been manifested in many ways and for many purposes.

A. The origin of dances - Urlen in her book, Dancing, Ancient and Modern, believes that the origin of dance is based on a blend of three principles.

1. Ceremonial or religious dancing, imitative of movement spheres, as they were called in the ancient cosmogony
2. Dramatic or histrionic representation of man's chief passions-love and war
3. Mimicry of animals, as an outcome of the belief in animal ancestry
4. All forms of dancing are symbolic of cultures of the countries from which they originated

B. Values of dancing

1. It affords pleasure either to the participant or spectator
2. It serves as an outlet for many forms of expression.
3. It gives vent to imagination, fancy, and creativity.
4. In many instances it has been an important part of religious ceremonies
5. It is an activity for recreation and physical education.
6. It helps children to love and appreciate good music.
7. It is an excellent media for social development.
8. It has cultural value-reflects patterns of other countries.

C. Kinds of dancing

1. Modern dance-a type of creative dance that uses the body as a means of expressing feelings, ideas, emotions, moods, or situations
2. Social dance
    a. It provides an activity which enhances the social life and develops social graces.

b. Popular dance steps are as follows:

(1) The Foxtrot (basic dance step to all other steps)

(2) The Lindy - jazz (national dance that probably descended from the American Negro)

(3) The Simple Break (change of step)

(4) The Cha-cha-cha (triple or simplified Mambo) originated in Cuba

(5) The Mambo--originated in Cuba from the Rhumba

(6) The Rhumba--originated in Cuba

(7) The Samba--originated in Brazil

(8) The Tango--originated in Latin America

(9) The Calypso--originated in British West Indies

(10) The Merengue--folk dance of the Dominican Republic

(11) The Waltz--regal and graceful dance of the early Americans

3. Folk dances-These have been defined as the traditional dances of a given country which have evolved naturally and spontaneously in conjunction with every day activities and experiences of the people who developed them. They re-enact customs and events constituting an important part of their history and patterns of daily living.

4. Square dance-a traditionally American dance-Talented children should study the following phases of this popular dance:

a. Background of dance

b. Organization of dance

c. Group formations

d. Basic square dance figures

e. Singing and patter calls

5. Round dance(American dance)

a. Basic steps of the round dance are the two-step, the polka, the scottische, the mazurka, and the waltz.

b. Some popular round dances are as follows:

(1) Ten Pretty Girls

(2) The Teton Mountain Stomp

(3) Cotton Eyed Joe

(4) Jessie Polka

(5) Arizona Polka

(6) Heel and Toe Polka

(7) Scottische

(8) Tennessee Wig Waltz

(9) Varsouvienua

(10) Chapanecas

(11) Black Hawk Waltz

6. Folk dances of other countries

a. Penny Reel (British West Indies)

b. Parisian Polka (Denmark)

c. Greensleeves (English-American country dance)

d. Boston Two-Step (England)

e. Eva Three-Step (English-Canadian)

f. Alfelder (Germany)

g. Brummel (Germany)

h. Kritikos (Greek)

i. Csebogar (Hungary)

j. Irish Long Dance (Ireland)

k. Sicilian Tarantella (Italy)

l. Patch Tanz (Israel)

m. Mi Pecosita (Mexican)

n. Kohanochka (Russian)

o. Gie Gordons (Scotland)

p. Ersko Kolo (Yugoslavia)

(Note) Correlation of these dances with social studies would provide much creativity and originality.

7. Tap dance-(Vaudeville type dancing)
a. The Simple Soft Shoe
b. The Simple Buck
c. The Simple Waltz Time

8. Ballet - A creative dance that is very artistic and is marked by a great deal of variety, intricacy, and expressiveness in movement.

Note to teacher - All of these dances with instructions for teaching and selected records to be used may be found in the following book: Dance Handbook, 1959 edition, by Dr. Margery L. Turner, is published by Prentice Hall, Inc., Englewood Cliffs, New Jersey.

This We Can Expect........

1. Democratic experiences of the highest order that will call upon each child to contribute his best efforts. In return, he experiences individual satisfaction for having participated in these fine aspects of our heritage.
2. Appreciation for the contributions that other cultures have given to us.
3. Awareness of the influences of the various cultures on our present day living.
4. Opportunity for our young people to grow in social understanding and cooperation.
5. Provision for a controlled emotional outlet.
6. Provision for an avenue of self-expression in one of the arts.
7. Encouragement and guidance of the child's imagination.
8. Experience in thinking on their own.
9. Ability to express ideas fearlessly.
10. Development of creativity and originality.

BIBLIOGRAPHY

A. BOOKS

Abraham, Willard, *Common Sense About Gifted Children*. New York: Harper and Brothers, 1958.

Anderson, William, *The National Government of the United States*. New York: Henry Holt and Company, 1946.

Bawden, Arthur Talbot, *Man's Physical Universe*. New York: The MacMillan Company, 1953.

Beard, Charles A., and Mary R. Beard, *A Basic History of The United States*. New York: Doubleday, Doran and Company, 1944.

Birch, Jack W. and Earl M. McWilliams, *Challenging Gifted Children*. Bloomihgton: Public School Publishing Company, 1955.

Brueckner, Leo J., Foster E. Grossnickle, and Elda L. Merton, *The New Knowing About Numbers*. Philadelphia: The John C. Winston Company, 1959.

Canfield, Leon H. and Howard B. Wilder, *The Making of Modern America*. Boston:Houghton Mifflin Company, 1954.

Carle, Clyde G., *Building Arithmetic Skills with Games*. Daneville: (The Instructor Handbook Series). F. A. Owen Publishing Company, 1959.

Casner, Mabel B. and Ralph H. Gabriel, *The Story of American Democracy*. New York: Harcourt, Brace and Company, 1946.

Chase, Stuart, *Power of Words*. New York: Harcourt Brace and Company, 1954.

Davis, Ira C., John Burnett and E. Wayne Gross, *Science Observation and Experiment 1*. New York: Henry Holt and Company, 1958.

Davis, Ira C., John Burnett and E. Wayne Gross, *Science Experiment and Discovery 2*. New York: Henry Holt and Company, 1958.

DeHadn, Robert F., and Jack Kough, *Helping Children with Special Needs, A Handbook for Teachers*, Vol. II., Philadelphia Science Research Associates, 1956.

Duggan, Anne Schley; Jeanette Schlottmann; and Abbie Rutledge, *The Teaching of Folk Dance*. New York: A. S. Barnes and Company.

Durland, Frances Caldwell, *Creative Dramatics for Children*. Yellow Springs, Ohio: The Antiach Press, 1952.

Henry, Nelson B., ed., *Education For The Gifted*. Chicago: University of Chicago Press, 1958.

Hicks, John D., *A Short History of American Democracy*. Boston:Houghton Mifflin Company, 1946.

Holton, Gerald, Introduction to Concepts and Theories in Physical Science, Cambridge: Addison-Wesley Publishing Company, Inc., 1953.

LaSalle, Dorothy, Rhythms and Dances for Elementary Schools, New York: A. S. Barnes and Company, 1926.

Laycock, Samuel R., Gifted Children. Montreal: The Copp Clark Publishing Company, Ltd., 1957.

Lease, Ruth and Geraldine Brain Sikes, Creative Dramatics in Home, School and Community. Harper and Brothers, 1952.

Miles, Catherine C., "Gifted Children," Manual of Child Psychology. L. Carmichael, ed., New York: John Wiley and Sons, 1954.

Muzzey, David Saville, A History of Our Country. Boston: Ginn and Company, 1936.

Muzzey, David Saville and Horace Kidger, The United States. Boston: Ginn and Company, 1953.

Noll, Victor H., The Teaching of Science in Elementary and Secondary Schools. New York: Longmans, Green and Company, 1939.

Otto, Henry J., ed., Curriculum Enrichment for Gifted Elementary School Children in Regular Classes. Austin: University of Texas, 1957.

Otto, Henry J., Social Education in Elementary Schools. New York: Rinehart and Company, Inc., 1956.

Potter, David M., and Thomas G. Manning, Nationalism and Sectionalism In America 1775-1877. New York: Henry Holt and Company, 1949.

Preston, Ralph C., Teaching Social Studies In The Elementary School. New York: Rinehart and Company, Inc., 1958.

Russell, Mary M., Drama As a Factor in Social Education. New York: George H. Doran Company, 1924.

Ryan, Grace L., Dances of Our Pioneers. New York: A. S. Barnes and Company, 1939.

Simas, Jack, Social Growth Through Play Production, New York: Association Press, 1957.

Turner, Marjery J. Dande Handbook, New Jersey: Prentice-Hall, Inc., 1959.

Viola, William N., Creative Dramatics for Secondary Education. Boston: Expression Company, 1932.

Ward, Winifred, Playmaking with Children. New York: Appleton-Century-Crofts, Inc., 1957.

Wells, Charles F., Drama Clubs. Boston: Walter H. Baher Company, 1933.

B. PERIODICAL ARTICLES

Dabney, Virginius, "He Made the Court Supreme," The Saturday Evening Post, September 24, 1955 issue. The Curtis Publishing Company, Philadelphia, 1955.

"Educational Leadership," Journal of the Association for Supervision and Curriculum Development. p. 222, January, 1956.

Green, Roberta, "Teaching How Language Works," The English Journal, Vol. XLVII, pp. 25-28, January, 1958.

C. PUBLICATIONS OF LEARNED ORGANIZATIONS

Brown and Johnson, "Education for the Talented in Mathematics and Science," Bulletin No. 15 (Reprint 1953) U. S. Department of Health, Education, and Welfare.

Carter, C. Douglas, Harold H. Bixler, and C. D. Killian, Enriching the Curriculum. (A Manual For Teaching Bright and Gifted Children). Winston-Salem City Schools, 1959.

_______, compiler, Science for the Elementary School. Raleigh: State Department of Public Instruction, 1953.

Enrichment Experience for Rapid Learners in the Elementary School. Curriculum Bulletin No. 4, Raleigh Public Schools, Raleigh, N. C., 1958-59

"Enrichment Ideas for Classroom Use with Gifted Children," Longview Public Schools. 1958. Associated Public School Systems, N. Y.

Guide for Instructor in Mathematics 9D and 10D, Curriculum Bulletin No. 61, St. Paul Public School, 1957.

Guiding Your Gifted. (A Handbook for Teachers, Administrators and Parents). The Educational Service Bureau, School of Education, University of Pennsylvania, Philadelphia, Pa., 1954.

Lloyd, Ramona, Providing for the Abler Student in Social Studies. Curriculum Bulletin 56CBM72, Houston Independent School District, 1950.

Reeves, Ruth, Challenging the Gifted Student in English: Composition. Curriculum Bulletin 56CBM1, Houston Independent School District, 1956.

Reeves, Ruth, Challenging the Gifted Student in English: Literature. Curriculum Bulletin 56CBM2, Houston Independent School District, 1955-1956

The Gifted Child, His Education in the Public Schools. Philadelphia Public Schools, 1956.

C. UNPUBLISHED MATERIALS

"Auburn Curriculum Study, Handbook on teaching the Elementary Gifted Child", Department of Education, Auburn, Maine.

Oyce, Elsie, and L. D. Crane, "The Gifted Child," Cheyenne Public School, Cheyenne, Wyoming, 1957.

________, compiler, "General Guide for Teachers with Provisions for Superior Pupils." El Paso, Texas, Undated.

Hanes, Robert C., "The Newspaper in The Classroom." Publication 400-7, Winston-Salem City Schools, Undated.

Scott, Jessie Page, "Techniques of Teaching Grade Six." Unpublished Graduate Paper, East Carolina College, Greenville, 1957.

________, compiler, Suggestions for Working With the Gifted - Gr. 1-12. Arlington County Public Schools, Arlington, Va. Undated.